The Citrus Industry
EXCLUSIVE SPECIALIZED CITRUS PUBLICATION
Issued Monthly
Representative of every interest
Representing no special interest

Vol. 11 TAMPA, FLORIDA, AUGUST, 1930 No. 8

Citrus Prospects For The Coming Season

By A. M. Pratt, Manager, Florida Citrus Growers Clearing House Association

The first thing we think of in prospects for the season immediately ahead of us is the crop. How big is it? During the bloom there were dire predictions of 30,000,000 boxes or more. Then so much fruit dropped off that some operators made public estimates as low as 15,000,000 boxes. In round figures the crop this past year was about 8,000,000 boxes of oranges, 6,000,000 boxes of grapefruit or a total of 14,000,000 boxes. In the year 1928-29 in round figures the crop was 14,000,000 boxes of oranges, and 9,000,000 boxes of grapefruit. Some are suggesting for this coming year about 14,000,000 boxes of oranges, or the same as two years ago, with about 7,000,000 boxes of grapefruit. This estimate, and the figures given on the previous years, do not represent total production but rather the total shipped in carload lots or by boat. There is no accurate way of knowing what moves locally or by express. The figures do not include culls or cannery fruit.

The Clearing House has made no estimate as yet. We will be making an accurate crop estimate between the first and fifteenth of September, and will be hiring only long experienced estimators or "lump buyers" to make this estimate. Prior to putting these experts to work we will be asking the local managers in each county to send in their confidential estimates of the percentage of increase or decrease by varieties; the

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oranges having only two groups, the valencias in one and the midseason and early oranges in the other; grapefruit likewise two groups, the Marsh Seedless being one and the Duncan and other grapefruit the balance; tangerines being a group to themselves. Key groves will be selected for the experts to check against the confidential box figures from the house managers who expect to market such crops. We will have previous years' records on such key groves so that we may determine what percentage of increase and decrease is indicated. We do know, however, that Florida has a good sized crop of oranges ahead; also, that California has set a crop under unusually favorable conditions, although the last advice we had from California was a guess that the crop would be about half way between this present season and the previous season.

The reactions as to probable prices that we will get this coming season are widely divergent. Some growers have $2.00 as an average return in mind for net on the tree for midseason oranges, others $1.00. Seventy-five cents per box, net on the tree, is possibly a safe average on oranges for the year 1928-29. We cannot help but feel, however, that it would be a serious mistake to figure that we have only a seventy-five cent year ahead of us. There is no question but what we have made distinct progress since that year. The industry is working together as it never has before.

It is true that the Clearing House will not have a big sum of its two cent assessment left for advertising but if we had a million dollars to

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It is true that the Clearing House will not have a big sum of its two cent assessment left for advertising but if we had a million dollars to

spend in advertising, it would do Florida very little good if we did not handle our problem together in the many ways that we now find we can.

Starting out with what we hope will be an accurate crop estimate, and knowing that our members will not only carry out prorating orders as to shipments, but are thoroughly converted to the necessity of such regulations, we know that the crop can be handled systematically and wisely so far as distributing throughout the season is concerned, especially with the extension of time that our revised quarantine conditions are now giving us, until June first.

In a big crop year there is always more danger of shipping to auction in undue proportion than in a short crop year. This is specially true because of the difficulty of selling the off-grade or off-sizes on f. o. b. orders, and this type of fruit, which should never go to auction, seriously increases the congestion at auction markets. Nevertheless the industry has, during the two years of the Clearing House, been furnished with so much conclusive evidence of the necessity of properly restricting auction supplies so as not to permit these public returns becoming consistently lower than the private sale averages, that we are confident that our members will forestall this danger; especially as they will have before them daily the exact number of cars rolling to each auction in comparison with the year previous, as well as two years previous.

The unemployment problem is the most serious it has been for many years and is bound to have some effect on the consuming demand. The real trouble with Florida in the past has not been so much some of these very general financial situations but Florida's own lack of self-control and lack of organized effort. With eighty percent of the shippers today having the benefit of the combined experience of all of their fellow-members, with our shipments being prorated in the auction markets and with teamwork surprisingly good, we can meet a big crop problem here and in California with resources that were not used two years ago, because we have actually learned to do these things together, not only because we are under contract to do so but because of the splendid spirit of cooperation that exists on the part of our shipper-members, as well as our growers, in desiring that the fundamental requirements be directed from one head.

We are no longer working in the dark. There is not only interchange of price information through the Clearing House but on the last of the week we know not only that week's shipments but the next week's shipments. As we run into possibly difficult situations there will be more than ever a firm quiet confidence in the guidance of the Clearing House. As manager I know daily what each sales manager has done in his day's effort. His highest, lowest and average prices, how many cars he has rolling unsold, how many to auction, and can see his tendency as compared with other shipper-members, and can guide and will guide by contacting over the telephone our shipper-members, giving each of them the benefit of this information without disclosing the confidential figures of any competitor. There is bound to be under this close contact together, with the vast amount of statistical data furnished our members by wire and bulletin, a uniformity of price viewpoint and a self-confidence that could not possibly exist if we were not working out this problem together in the splendid way in which the industry has now developed.

The Clearing House is earnestly desirous for the sake of the welfare of the growers of the state, as well as the entire state itself, that other shippers and growers who are not yet members, should really know what the Clearing House is doing. The Clearing House is not working for private ends. Its motives cannot be questioned by anyone familiar with it. We have shown what can be done, in meeting successfully a congested market situation in the eleven northeastern states this past year, due to quarantine restrictions, when we marketed in those eleven northeastern states more grapefruit than the year previous and yet realized seventy-three cents per box more. There is no explanation possible of this gain of seventy-three cents except that there was confidence on the part of our members at this end, real team-work resulting from that confidence and the confidence on the part of the trade at the other end because of the self-control exercised and the operation of the prorating committees formed by the receivers themselves, under the direction of the Clearing House.

Because we were able to meet this test successfully and realize seventy-three cents per box more, notwithstanding having to market more fruit in that territory, we cannot see but what we have a right to look forward to the larger crop we have to handle with confidence.

Psychology plays a tremendous part in all business transactions and most emphatically plays a big part in handling perishable products. We probably will not get the same prices this coming year on oranges that we did the past year, but by working together through one organization and doing our job with the vast amount of information available to all by the system we follow, there is no question but what prices on f. o. b. sales, as well as auction markets, can be maintained at a decidedly higher level than would be possible if each of our shippers were handling his own part of the problem alone without the help and control made possible by combining in our efforts. Some of those who are down-hearted about meeting a big crop year may be highly surprised in the outcome, and those who may be expecting too much, we believe, will see the problem met in a manner that will again convince the membership that the state has an organization that has done its job well, and that is of inestimable value to the industry.

EXPERIMENT STATION HELPS TO INTRODUCE NEW CROP TO SOUTH

Crotalaria is now added to the list of plants which the Florida Experiment Station and United State Department of Agriculture have introduced into the southeastern part of the United States.

Letters received by the Experiment Station as a result of two recent articles on this new soil building crop—one in a national and the other in a Southern farm publication—indicate a tremendous interest in Crotalaria from Texas to West Virginia. The Florida station has supplied seed for testing to experiment stations and farmers in most of the other Southern states. Indications are that the crop will grow successfully in most of them, and that it will be widely planted another year.

Other crops which the Florida station has helped to introduce into the South include velvet beans and tung-oil.

FUNGUS WILL CONTROL WHITEFLY PESTS ON SWEET POTATO VINES

Red Aschersonia, well known fungus enemy of citrus whiteflies, is also effective in destroying the sweet potato whitefly, Dr. E. W. Berger, entomologist with the State Plant Board, has observed. A culture of the fungus will treat about an acre effectively, and can be obtained for one dollar, to cover cost of production, from the Entomology Department of the State Plant Board, Gainesville. Full directions will come with the fungus.

Heavy Investments In New Plants and Improvements

Evidence that Floridians are looking with confidence to the continued growth and prosperity of the citrus industry of the state is contained in the many heavy investments now being made in new packing houses, new canning plants and additions and improvements to plants already in existence.

While we have not at hand a complete list of all such improvements, just a glance at what is being done in two counties in the Ridge section of the state will serve as an index of the spirit of optimism which pervades the industry.

At Lake Wales The Ridge Citrus Canners, Inc., has been organized with a paid up capital of $100,000 and will establish a cannery to can grapefruit during the coming season.

Although not incorporated under the cooperative association laws, the organization will be cooperative, stock being held by the following citrus growing or packing corporations: Lake Wales Citrus Growers' association, Mountain Lake corporation, Waverly Citrus Growers' association, Highland Park Packing House, Inc., Babson Park Citrus Growers' association, and the Alcoma corporation. Each holds an equal share in the new enterprise.

A plant covering 100 by 200 feet and costing about $60,000 will be put up at once. It will have a capacity of 1000 to 1200 cases of packed grapefruit daily which means about an equal number of field boxes of grapefruit. From 100,000 to 150,000 cases of fruit will be packed this season. From 200 to 250 persons will be employed.

Crop of 700,000 Boxes

All the six incorporators are packing houses except the Alcoma corporation, which is a large grower. Their total crop this year will be about 700,000 boxes. A cannery output for all their fruit of canners' grade will insure none but their highest grade fruit being sent to market.

Sales will be handled by C. S. Crary of Streator, Ill., who has been a factor in the corn and asparagus pack for nearly 40 years. He has been president of the Canners' Association of America and is widely known in the canning industry. Mr. Crary is a grove owner at Lake-of-the-Hills, and has been for many years a member of the Waverly Citrus Growers. He spends part of his winters here every year, and will be here this year during much of the packing season.

Officers and directors of the ridge canners with the houses they represent, follow: President, H. S. Norman, Waverly Citrus Growers; vice president, F. M. Campbell, Mountain Lake corporation; secretary-treasurer, Roy Craig, Alcoma corporation; directors, J. K. Stewart, Lake Wales Citrus Growers; H. E. Fairchild, Babson Park Citrus Growers; Deeley Hunt, Highland Park Packing house.

In addition to the above, the following projects are now under way in Polk and Highlands counties, new work and improvements aggregating an investment of more than a million and a half dollars.

The largest amount is being spent by the Florence Villa packing plant which is erecting a new house with new machinery at a cost of $175,000.

Figures compiled by George Williams, manager of the Winter Haven Citrus Growers association packing house, show that five new packing houses are being built in Highlands county and five in Polk. Three new canning factories are being built in Polk and other packing plants in both counties are adding improvements.

Construction Listed

Following is a list of the construction under way on new or enlarged plants:

Florence Villa packing house	$ 175,000
Winter Haven Citrus Growers association	65,000
Auburndale Citrus Growers association	100,000
Haines City Citrus Growers association	9,000
Holly Hill Packing company (new cannery)	35,000
Lake Hamilton Citrus Growers association	65,000
Dundee exchange (new plant)	40,000
Dundee exchange (new cannery)	45,000
Waverly exchange	4,000
Ridge Citrus Canners	60,000
Mammoth Grove	10,000
Tower City Packing company (new plant)	30,000
Highland Park packing house	8,000
Babson Park Packing company	4,500
Frostproof exchange	4,000
L. Maxcy, Frostproof (enlarging cannery)	20,000
Frostproof Packing Company	6,000
J. C. Conner & Co. (new plant)	50,000
Lake Garfield exchange	4,000
Bartow exchange	3,000
Frank Purpura, Bartow (new plant)	35,000
Eagle Lake exchange	12,000
Lake Alfred Citrus Growers association	20,000
Lynchburg Citrus Growers association	7,000
Lucerne Park Citrus Growers association	12,000
Adams Packing company, Auburndale	4,000
J. B. Lewis company, Auburndale	9,000
Lakeland exchange	10,000
Lakeland Highlands association	3,000
William G. Roe, Winter Haven	15,000
Winter Haven Growers, Inc.	5,000
Avon Park exchange	6,000
L. Maxcy (Avon Park) (new plant)	50,000
American Fruit Growers (new plant)	35,000
Greg Maxcy (Avon Park) (new plant)	50,000
Greg Maxcy (Sebring) (new plant)	125,000
Lake Placid exchange (new plant)	75,000
Total	$1,500,500

ENGLISH BOTANIST STUDIES TRUCK CROPS IN FLORIDA

H. C. Sampson, economic botanist for the Royal Botanical Gardens, Kew, England, was recently here, on an extensive visit to Florida and Porto Rico, studying the production and marketing of truck crops.

While here he held lenghtly interviews with workers at the Experiment Station and Agricultural Extension Service.

Mr. Simpson has spent 17 years traveling over tropical British areas studying tropical and subtropical truck crops.

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History and Growth of Citrus Production in the Rio Grande Valley

By Raymond Burrowood in the Mission, Texas, Times

By the simple law of geometrical progression the Valley citrus industry is steadily advancing to a factor of international importance when the world's production of citrus fruit is mentioned. Time and again believers in the industry have cited plantings and probable production to support their claims for recognition of this fact. Yet until just recently Texas had received practically no national recognition and very little mention as a potential citrus production area. Even the very latest books on citrus skip by Texas with only a casual mention of our plantings and shipments of perhaps five or six years ago. It is only within the past year that the latest bulletins of California, Florida and the federal government have admitted the Valley to be a serious factor that must be reckoned with when computing future production. But the time is no longer in the future when our weight will be felt in the market. That time is at hand with the present season when our nearly six thousand carloads will go upon national and international market. Grave, envious, jealous eyes are being cast our way by competing sections. The following study of the records reveals the reason.

Prior to 1920, with the exception of scattered small orchards, practically the whole of Valley-grown citrus consisted of backyard trees, mostly in the older residential districts of Brownsville, where fruit for home consumption had been grown for the past half-century.

For the year 1920 the government record shows a total of 123,951 trees of all varieties. And this included all of Texas.

The Valley made her first bid commercially with the first carlot shipment of citrus, which was made during the season of 1921-22, when 54 carloads were sent out. During the 1920 season was begun the heavy plantings that have practically doubled with each passing year since the date when 300,000 young trees were set. It is interesting to note that of this total only 50,000 were Valley-budded stock. The remainder came from both Florida and California.

The next season, 1921-22, saw 200,000 additional young trees set, of which it is interesting to note that 70,000 were home-grown.

The season of 1923-24 saw plantings leap to 400,000 trees, 338,294 of which were budded to Valley-grown seedlings. Shipments amounted to 142 cars, and believers in deep water began to predict 20,000 carloads annually in another ten years. Authorities scoffed at such absurdities. But were the forecasters so very far wrong? Let us follow the record more closely and see which way the wind blows:

By the summer of 1928 we had a total of 3,419,157 trees of all ages and varieties. That is an imposing figure to reach within eight years of planting activity. It becomes enormous, astounding, when it is learned that, of these, 1,204,270 had been planted within the preceding twelve months, and that, of these, 916,334 were grapefruit, practically 100 per cent home grown.

Now this table begins to be of some benefit. We learn that of the grand total but 447,202 are five years old or older, and that with this approximately one-seventh of the total acreage in bearing, we had a production of 2,376 carloads plus the local consumption, which undoubtedly amounted to some hundreds of cars.

Now we have the census of 1929, which reveals a grand total of 5,118,-981 trees of all ages and varieties. A record-breaking year of planting had just been completed, with a total of 1,699,824 trees, practically. As the gamblers say, these are getting to be important figures. There is no doubt but what the bulletins of the coming year, both state and national, will consider Texas most seriously as a leading citrus area. Next month will begin to roll the crop from 712-343 mature trees of five years or older. This is an addition of 235,151 trees, or 50 per cent, to last years total. In addition to the coming five-year-olds will be 394,044 trees in their fourth year of growth and second year of production, which will boost the total production considerably.

Conservative estimates place production for the present season at nearly 6,000 cars. Then next season, with 1,106,397 trees in the five-year class, we will surely reach the 10,000 car mark. That will be 1930-31. Then for 1931-32 there will be 1,569,838 five-year-old trees, or enough for a probable production of 12,000 to 15,000 cars.

By 1933, just ten years since the 20,000-car mark was first mentioned, the Lower Rio Brande Valley will have over 2,000,000 trees of five years old or older in full bearing; and this is allowing for a loss of 214,-887 trees from all causes. Besides this, there will be an additional 1,-204,270 trees four years old and bearing their first crop of commercial importance—which will undoubtedly swell the total to 20,000 carloads. All of this within 13 years of the first carlot shipments.

Of course, there is a major weakness in the census as now prepared, and that is the fact that no allowances are made for the death of trees, either by accident, disease or intention, but, according to tabulators, such trees are more than made up for by scattered groves which the inpectors might possibly have missed. It is the intention at the present time to make the census of next year as nearly complete as is humanely possible. But this weakness will not materially affect the above figures on production, since nowhere has the probable production of two-year-olds been figured. Although this is not generally figured, the total production from two-year-olds, when considered over the entire Valley area, will make a surprisingly large total.

To sum up, such an analysis of our census only serves to substantiate the claims made by believers in the industry during the years of its infancy. But they are the last ones to need substantiation for their beliefs; they have always known.

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Produce Agency Act

Three Years Under The Produce Agency Act

By H. A. Spilman, Marketing Specialist, U. S. Department of Agriculture

Administration of the Produce Agency Act during the last three years has disclosed much that is good, much that is indifferent, and some things that are thoroughly bad in the practices of the produce industry. There are approximately 40,000 shippers, dealers, brokers, and commission merchants engaged in the produce business in this country. With so great a number in a business of such magnitude it is inevitable that there are some unscrupulous persons in the industry and that some undesirable practices have become established.

In many markets it is common to do what is called "taking to account", which means that the agent, himself, buys the produce which the shipper has entrusted to him for sale. The ordinary rules of agency prohibit an agent from buying goods from his principal without the latter's consent and certainly there seems no justification for the agent charging a commission on goods which he, himself, purchases.

The commission men offer a simple justification for this practice. The goods, they say, are in their hands; and the shippers want to know how much they have brought. Not all of the goods have been sold, but the shipper must have an answer; so the receiver fixes what he considers a fair or safe price and takes the produce at that price.

All of the shipment, except a few odd packages, may have been sold. To clean up the shipment and render an account sales the commission man may take these odd packages at a price which he himself fixes, make up the account sales and send his check. One commission merchant claimed it was necessary for him to "take to account" because the city in which he operated was so situated that he had to make prompt returns to keep shipments coming to that city instead of to competing markets. When a shipment was received, he would wire the shipper that the produce had sold for so much; what he actually did was to buy in the shipment at that price.

These reasons may sound more or less plausible, but it has been learned that the practice is susceptible of great abuse. In the case just mentioned, for example, the commission merchant made up accounts sales showing that goods had been taken to account at a certain price when in fact he had sold the goods the week before for a somewhat higher price. He charged a commission on the price at which he took to account and pocketed the difference. Obviously a dishonest receiver can use this subterfuge of taking to account to buy in commodities at a low price and sell them at a high price.

The department insists that if goods are taken to account it shall be done only with the knowledge and consent of the shipper, and that the commission merchant has no right to charge a commission on goods so taken. If the shipper requires it, the commission merchant must account on the basis of the actual prices received, in which case he would have the right to charge a commission. It is significant that those who make a practice of taking to account object decidedly to saying to the shipper, "We have bought," instead of, "We have taken to account." If the practice is as innocuous as those who use it claim it to be, there would seem to be no hardship involved in calling it by its true name.

Another practice followed in some markets, although frowned on in others, is that of reconsigning a shipment. This results in two commissions. When a shipper entrusts his goods to an agent to be sold for his account he expects that agent to be able to sell them and not to turn them over to someone else to sell. If the agent is unable to dispose of them he should secure the shipper's consent before reconsigning, or should see to it that the shipper pays only one commission. Many receivers urge that it is frequently to the interest of the shipper to have goods reconsigned since it spread the distribution of the shipment over more receivers who naturally can reach a greater number of customers.

This argument is alluring and may be true in many instances, but the custom is subject to abuse. We have, for example, the case of a dealer to whom a carload of melons was consigned from a southern point. Upon its arrival he immediately reconsigned it to a more northern city. The second dealer sold it and rendered an account sales showing that the melons sold for $332.00 and that the expenses, including a commission of 10 per cent, amounted to $298.42. This left net proceeds of $33.58, for which a check was sent to the first dealer. The first dealer, in preparing to make up an account sales to send to the shipper, added to the net proceeds of $33.58 the freight from the shipping point to his city, which amounted to $178.08, the total of the two items being $211.66. That he did this is shown by a penciled notation on the account sales, which he attempted unsuccessfully to erase. Evidently he felt that the sum of $211.66 might be called in question since he wrote below it the sum of $200 and on the account sales showed $200 as the gross sales for the melons. From this amount he deducted freight in the sum of $178.08, and another 10 per cent commission amounting in this case to $20.00. These expenses totaled $198.08, leaving a net to the shipper of $1.92.

An arrangement existed between the two dealers whereby the first dealer was to receive 3 per cent of the 10 per cent commission charged by the second dealer on goods reconsigned to him. The first dealer was not entitled to the commission of $20.00, which he charged, nor should he have taken the freight into consideration in making up his account sales since it had already been deducted by the second dealer. He should have sent to the shipper the account sales as received from the second dealer and should have sent to him a check for $33.58 instead of one for $1.92. Such a case as this shows how a practice which may have been started in good faith can be turned to dishonest ends.

A dealer who had had for several months two or three hundred dollars belonging to a shipper naively admitted that he needed it in his business. Another, when asked why he failed to pay $3,600 due on four cars of apples, unblushingly answered that his firm was hard up and needed the money to help it out. Many shippers believe that unscrupulous commission merchants use shippers' funds to finance their business. Apparently some do this, but reputable houses as a rule remit promptly.

(Continued on page 33)

Agricultural Pests

Man's Everlasting Fight Against Insect Pests

Dr. C. L. Marlatt, chief of the Bureau of Entomology of the United States Department of Agriculture, after a thorough investigation of the insect problem, has given out the following discussion on the question:

The man view is that he is the dominant ruling type in the world. The insect view, if expressed, doubtless would be much to same effect.

At any rate, we can say with assurance that the insect world is unaware of, and ignores, the man view and unconcernedly fills its ordered role in the economy of nature. In so doing insects in many of their activities challenge man's boasted dominance.

The picture of the antagonism between insects has been often painted. Credit must be given, however, to the fact that perhaps 50 per cent of the insect life of the world plays a useful role. As cross-fertilizers of most plants, they insure the perpetuation of a vigorous growth—action essential to the production of important field and orchard crops. They produce, also, important articles of food, such as honey, and articles useful in manufacture and arts and for adornment, as wax, silk, shellac, dyes, etc. They are useful also in maintaining the balance of nature by preventing undue increase of particular plants or animals.

The great disturber of this balance of nature is man himself in his effort to produce unit crops over vast areas and it is largely here that the conflict lies between man and insects.

The natural reaction of insects to those artificial conditions is to seize the favorable opportunity thus created, to multiply enormously, with the result of setting the stage for a hard fight to determine whether it shall be man or insects which shall benefit most from the labors of the former. Here, again, there is another balance in nature, and man is greatly aided by other insects which are parasitic or predacious on the predators in his fields and orchards.

The conflict to protect his crops from destruction by hordes of insects and also protect himself and his domestic animals from parasites and disease-carrying types, is fortunately one-sided. Insects in all their relations follow blindly their inherited instinct with no appreciation of any conflict. On the other hand, with man, the conflict is intentional and is what we now refer to as applied or economic entomology. This field of work has been enormously developed in the last 50 years, but goes back to the dawn of history. In the relation of insects to man it is a very fortunate thing that this most abundant type of life in the world acts solely by instinct and not by reasoning. It is terrifying even to contemplate the typhoid fly, or the yellow fever or the malarial types of mosquitoes spreading these diseases with malicious purpose. The existing balance of nature might be quickly broken down, so far as man and the higher animals are concerned, and the insects would then be really the masters of the world.

Applied entomology has its largest development in United States. Our crops are grown on a larger scale and our climate in general is more favorable to insect life than in most other countries of the world, with the result that insect damage reaches enormous importance, and this has compelled us to develop, also on a large scale, means of control of such crop and animal pests.

Confining myself to the United States and to the present, the Department of Agriculture in its bureau of entomology, has developed during the last 50 years a force of entomologists doing work throughout the United States, independently or in co-operation with state institutions and agencies. The work of this bureau is distributed in some ten divisions. These divisions are charged with the study of deciduous fruit insects, cereal and forage insects, insects affecting tropical and subtropical and ornamental plants; insects affecting forest and shade trees; insects affecting stored products, insects affecting man and animals; bee culture investigation and museum work, namely, technical or scientific study of insects from the standpoint of determination and classification.

This work is being conducted at some 103 different field stations located in 37 states. There are additional stations in Alaska, Hawaii, Canal Zone, and in some seven foreign countries. All but one of these foreign stations are concerned with the collection of parasitic and beneficial insects to be imported into the United States to aid in the insect war. The conduct of this work in the United States and around the world involves 360 technically trained men.

Appropriations for this work was in a lump sum of about $20,000 in 1890 to upwards of $2,000,000 in 1929, not counting the $10,000,000 appropriation of 1927 for a demonstration of the possibility of controlling the corn borer over half a dozen states—largely an educational effort.

Every state also has many trained entomologists.

The pertinent question will be asked: What benefit will result from the work of this increasing force of technical men and this increasing expenditure? An estimate of such benefit and saving was recently prepared for Dr. Woods, director of research work of the department, for presentation to congress and was reduced to the last limit of modesty. The details of this statement would be very interesting, if space permitted it to be analyzed.

It covers some 75 different important work projects and indicated annual savings to the farmer and others ranging from a million dollars to 50 million dollars per project, to a total annual savings upward of $330,000,000, and this does not include some 20 or more subjects for which savings could not be estimated. The $330,000,000 of annual savings from work in applied entomology are well worth while, certainly on the basis of an expenditure for research in this field of less than two-thirds of 1 per cent of that amount.

The boll weevil damage was estimated at $600,000,000. Under the controls now generally practiced the loss of one-third or one-fourth of that amount would be unusual, and yet for the whole group of cotton insects, and they are numerous, an annual saving of only $50,000,000 is indicated in estimates referred to.

The damage to our citrus fruit has been tremendous in some quarters, as it amounts to perhaps as much as 600,000 crates.

With the fruit fly we are looking to the eradication of a pest with the object of eliminating future losses to our fruit and vegetable crops which might well amount annually to more than any expenditure which is being comtemplated in the campaign.

The man-insect war is on, the stake is large, and a great body of earnest men are enlisted. The enemy cannot be entirely eliminated, but he can be, and is being, effectively controlled.

CITRUS COMMENTS

—BY—

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

Is Cultivation And Over-Cropping A Valuable Practice?

(Continued from last issue)

The more obvious and direct objects sought by cultivation.

1. To break down and incorporate vegetation (cover crops) and fertilizer into the soil.
2. To hasten rotting of materials so incorporated and prevent their loss through air and sunshine exposure.
3. To stimulate tree growth and improve the tree condition.
4. Due to certain indirect effects there is a possible erroneous conclusion that soil moisture is conserved by cultivation.
5. To maintain physical condition of the soil.
6. To reduce fire hazard.

Some of related effects that may be secured.

1. A decided change in soil p H (degree of acidity or alkilinity).
2. An increase in the speed with which a tree absorbs soil moisture with its attendant increase in general tree activity, and, depending on season and temperature, a variation in sap circulation.
3. As a result of 2, the wilting point of the tree is directly affected during dry weather.
4. Fruit quality and quantity.
5. Because of certain indirect effects in tree (metabolism) activity, cultivation may for a time actually take the place of irrigation and vice versa.
6. Aiding in increased frost resistance.

The actual mechanical operation of "working in" vegetative material is not difficult, though it is admittedly an expensive operation and is quite a large item in grove expense. It seems to pay well to do the work so that the expense is fully justified excepting in those areas where permanent cover-crops may be followed to advantage.

In doing the actual work all growers now keep in mind the fact that under our soil condition, citrus trees are shallow feeders and carry a very large proportion of their active feeder roots in the first few inches of surface soil. Deep cultivation not only injures these roots with their great mass of feeder rootlets but when continued for any length of time prevents their reforming and robs the tree of a vital food absorbing support. This has a very serious injurious effect on tree growth. Other effects of deep cultivation seem to be a very rapid loss of vegetative material and inducing a sandy sterile soil condition that finally will not support even a thin growth of grass. Such bare spots in groves are not uncommon. The final tree appearance from too-deep cultivation is similar to that from other causes and can easily be confused.

The actual steps by which the loss of soil vegetative material from excessive cultivation takes place is beyond our knowledge. It is assumed that continued cultivation hastens the rotting of the material in the soil and it becomes broken up into minute particles very quickly, being entirely consumed thru various agencies. These are soil bacteria that feed on the material, there are tree rootlets, and the roots of the grasses and weeds that may be growing, there are losses from water leaching and sunshine exposure. None of these losses are replaced thru growth of new cover-crops.

It is easy to understand how quickly under such conditions a soil may become barren and sterile, supporting no vegetative growth and improperly nourishing the trees growing in it.

Such examples of over-cultivation as we can often find are illustrative of the effectiveness of cultivation in hastening the rotting of materials incorporated into the soil. A moderate use of the harrow or the plow will place our vegetative material where it should be and instead of a loss of soil "condition" we will have a gain in stored plant food. The sunshine heat under conditions of moderate cultivation does not aid in causing excessive losses thru too rapid a conversion of vegetation into food elements and their loss into the atmosphere as gasses, or thru the soil water in solution.

Organic materials often act as an absorbing agent in the soil. In fact, this is one of their most valuable actions. Tree rootlets are well adapted to feeding in decaying vegetation. They seem capable under such conditions of absorbing food materials in a proper balance, obtaining sufficient materials of all elements necessary to balance their growth and utilizing them effectively.

On the other side of the picture, organic material is capable of so affecting soil elements harmful to plant growth as to render them harmless, acting very much as a disinfectant; tho it is probable that they cause such materials to change over into harmless chemicals or actually combine them into useful plant foods. In addition to this absorption and conversion of harmful materials occurring in the presence of organic vegetation, there seems to be also a storage capacity for plant foods within such materials, allowing an excess to be absorbed and fed out gradually, spreading its effect thru a longer period of time and permitting larger applications to be used with safety and good effect. We can safely conclude that a grove soil full of organic material is a safe citrus soil and further, that a grove on such a soil can be forced more heavily and effectively than one not so located.

Even when such soils become dangerously dry, trees hold up better because of the superior feeding value they possess.

A brief summary of the advantages of cultivating organic material into the soil would read as follows:

1. Prevention of loss thru excessive exposure to sunhine after crop maturity.
2. Improve root feeding conditions for the trees.
3. Permit of balanced feeding to a greater extent.
4. Aid in the elimination of soil toxins that might be injurious to

plant growth. This would include temporary excesses of otherwise useful materials such as an overdose of nitrogen.

5. Improve the storage capacity of the soil for all food elements and their combinations.

6. Permit even feeding by the tree.

7. Permit heavier forcing for fruit production with safety.

8. Increase drought resistance thru better feeding by the tree.

In courtesy to the results obtained in soil investigational work from other states, it seems proper to conclude that cultivation does not conserve soil moisture. But a careful analysis of the factors surrounding Florida soils makes such a conclusion impossible of acceptance until the work is actually repeated under Florida conditions.

Moisture conservation and prevention of wilting of citrus has some very curious and interesting angles. There is ample room for investigation along this line. Many growers have noted that groves that should wilt often don't and groves that by all rules of the game should stand up well, wilt on the least provocation. The problem of wilting goes much further than actual moisture conservation. For the present at least, there is no reason for our not thinking there is a direct relation between moisture conservation and cultivation.

The physical condition of any soil, together with the p H reading decides the type of vegetation to which it is adapted. Within the proper soil acidity (p H) range citrus trees grow and do well in proportion to the physical state of the soil in which the roots feed. For example, we can easily find flat-woods soils that when first broken up are too acid and too wet for citrus trees. By cover-cropping, plowing, draining, and aeration, these soils soon support weeds and vegetation that would not otherwise grow on them. Crab-grass and ragweeds or bermuda grass indicate satisfactory soil conditions for citrus. When these grow freely, trees will also do well. After this, the water drainage and "cold-air" drainage are the limiting factors. If the slope of the field is sufficient to furnish adequate water drainage so that actual water damage to the trees can be avoided, a grove can be maintained in good condition on land that originally was entirely too acid to support trees and that physically, in the beginning, would not permit the roots to thrive satisfactorily. Such a change in the original conditions of the soil is largely a physical change and is maintained thru such physical processes as harrowing cover-crops into the soil.

The difference between such flat-woods soils as discussed above and high-land soil is more one of degree of acidity and drainage than actual physical difference. That is, the fundamental soil structure is very similar to start with, but there is a variation in sub-soil conditions that is much more marked.

A word regarding certain low land soils of the state is of importance here, as they represent the highest point any of our soils have reached in physical perfection for citrus work. The types referred to are the so-called hammock types and open, flat, heavy soils of the coastal plains that because of their once undrained condition were unable to produce the hammock type of growth. It is a very peculiar thing that such soils will maintain citrus trees in good condition long after thinner soils (those lacking such heavy physical condition) have become too wet and the trees growing in them severely damaged. Here again the buffer effect of a "heavy" soil is in evidence, permitting trees to withstand for a long period the damaging effects of high water. The main characteristics of such soils that can usually be easily seen are first, their vegetative content and second, some form of calcium(lime) better known as marl, shell, lime rock, etc., as the case might be.

Under the sixth and last head of the more obvious effects sought by cultivation, this brief discussion needs to point out only that during dry weather the fire hazard in a grove may be very great, even within heavy hammock areas. It pays, therefore, for all owners and especially those using permanent cover-crop methods to keep this in mind and protect their property as may be necessary.

One of the interesting things about citrus work is the inter-related effect of every process connected with it. In fact, it seems that the value of any proceeding should be considered very carefully in its relation to the ultimate aim sought before it is done. If any grove procedure is not planned to effect FRUIT PRODUCTION FAVORABLY, DISCARD IT AS A USELESS EXPENSE.

The more obvious effects are easily understood by all of us and usually are easy to secure, but the less obvious effects will not show up until the fruit matures, is picked and passes over the grading belt, and thence to market. Quality of the inside of the fruit is only partially judged by the outside appearance. Indirect effects are in the last analysis of more importance than direct ones, as they mean a fruit superior to the average, both in appearance and in inside quality. There is not the slightest doubt, that acidity of the juice, fruit rag, sprightliness of flavor, appearance both inside and out and to a certain extent color, can be greatly influenced by what we do. To some extent, regularity in bearing can be influenced.

A full discussion of effects would have to cover the whole field of citrus culture so only a few can be considered and even with these, there is an overlapping.

Soil p H or degree of acidity, is not of more importance now than formerly, we simply can test it out easier, that is if one is not color-blind. In talking about it we do not try to be "high-hat", but simply want to point out the additional safeguard it offers.

Under ordinary conditions, when everything is running smoothly a practical grower can easily get along without any direct test of his grove soil. But under competitive production or unusual weather, or new fertilizers, a p H reading made regularly offers an additional guide to help one in deciding what to do.

Incorporating cover-crops into the soil will have the general effect of increasing acidity but evidently this effect ceases to continue as our heaviest citrus soils are rarely below the optimum range. Continued accumulation of cover-crops on the soil also does not seem to run the soil test too low (i. e. too acid) for good results. Ammoniation sometimes blamed on too much vegetation can be handled by balancing the available plant food without reference to the p H reading. Fortunately, most citrus soils are already acid in their reaction. It is more in the older groves that the p H reading is of value. Here we often find a dangerous leaning toward a "too alkaline" condition. If this condition prevails, it is obvious at once that cover-cropping, applying organic sources, or otherwise reducing the tendency toward too much alkalinity is desirable and will be beneficial. If in addition, the physical condition of the soil is improved thereby, we get an even greater beneficial effect.

If Fall fertilizing in the Fall of the year steps up the activity in a short time, thru supplying of additional plant foods; the physical improvement secured thru "discing in" cover-crops will further improve feeding conditions. It will tend to hold down excessive stimulation along any

(Continued on page 22)

The Citrus Industry

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RESTRICTIONS LIGHTENED

The past month has witnessed some very important modifications of the restrictions which for the past year have surrounded the shipment of citrus fruits from Florida to the markets of the North and West and should conditions remain favorable for the next two or three months, it is believed that by the time the shipping season is fairly launched, much, if not all, of the Southern territory also will be opened to the products of Florida soil.

Last season unrestricted shipment of Florida fruits was confined to the eleven Northeastern states, while shipments to other territory, usually heavy consumers of Florida fruits, were so surrounded by restrictions as to make shipment into such territory practically impossible.

The letting down of the bars in Northern and Western territory, together with the prospect of early removal of restrictions in Southern territory and the lengthening of the season to June first, has done much to inspire confidence and optimism in the minds of Florida growers and shippers.

Coupled with the estimate recently issued to the effect that the orange crop will exceed by barely two per cent the ten year average, and that grapefruit will be barely up to the ten year average, the lifting of these restrictions has caused growers to look forward to a season of much better prices than had been anticipated with a heavy crop and continued restrictions in prospect.

Where six weeks ago growers and shippers were inclined to view the situation with a certain degree of pessimism, there is today a general feeling that the approaching shipping season will be one of fair prices and general prosperity for the industry. This is particularly true in view of the fact that more is expected of the Florida Citrus Growers Clearing House Association in the way of practical results than has hitherto been attained by that growers' organization.

While it would probably be too much to expect that prices equal to those of the past season, when both Florida and California produced extremely light crops of citrus, will prevail, growers and shippers generally are inclined to the belief that fair prices and good returns may be expected. This view is given emphasis by the fact that unusually large percentage of off color and off size fruit, which hitherto has been put on the market in competition with the better grades, will this year go into the canning plants at prices which mean a profit to the grower, while leaving the markets open to the better grades at higher prices.

All told, there is a better feeling in the industry as a whole than has existed at the opening of any season for a number of years past, notwithstanding the abnormal degree of unemployment and general business depression which now exists. There is an entire absence of any disposition on the part of growers to be stampeded into hasty action which might tend to release an undue amount of fruit early in the season with consequent ruin of the markets by flooding distribution centers with an excessive supply of fruit of undesirable quality. This in itself will have a tendency to restrict early supplies and operate to stabilize the price.

Unless some unforseen eventuality should arise, growers and shippers would seem to be justified in their present attitude of confidence as to the outlook for the season about to open.

MORE ADVERTISING NEEDED

The Citrus Industry is in complete harmony with the view expressed by the "Committee of Fifty"—advisory body of the Florida Citrus Growers Clearing House Association—that Florida should have a much larger sum available for the advertising of Florida citrus fruits.

The "Committee of Fifty" points out that California will this year spend $1,500,000 in advertising California citrus fruits, whereas the combined advertising of Florida citrus interests will not exceed $400,000. The "Committee of Fifty" contends that this sum is entirely inadequate to meet existing conditions, particularly in view of the fact that by far the greater part of this fund will be spent in advertising a certain Florida brand, the product of a single marketing agency.

What Florida needs, in the view of the "Committee of Fifty", is an adequate fund for the advertising of Florida citrus fruits as such, without regard to the particular brand under which it may be marketed. The "Committee of Fifty" believes that the Florida Citrus Growers Clearing House Association is the one organization fitted to carry out such a program of advertising for the benefit of all Florida growers.

The "Committee" further points out that advertising for this year's fruit crop, if it obtains the hoped for result of making it possible to market the crop at a profit, will have a much larger effect on the state than merely to make its leading industry pass a profitable instead of a losing season. The "Committee" claims it will again "sell" Florida to the people of the country and that Florida needs that sort of a revival of interest; while the psychological effect on the country of seeing that Florida is again prospering will result in bringing a greater crop of tour-

ists to the state this winter, in renewed interest in real estate and will turn the tide toward Florida once more.

Increasing the advertising fund means taking a larger "cut" out of each grower's box of fruit, but the members of the "Committee of Fifty" are all growers, and they are confident that it would mean better prices for fruit.

DEL MONTE COMES TO FLORIDA

Among the outstanding features of interest in citrus circles during the past month was the announcement that the Del Monte people, world famous canners of fruits and vegetables, have definitely decided to enter the Florida field for the extensive canning of grapefruit. Tampa is the site selected for the location of the Florida plant of the Del Monte concern.

The Florida Packing Corporation, canners and distributors of Del Monte products, with headquarters in San Francisco, have closed a deal for a factory site on East Broadway at Thirtieth street, Tampa. The plant, it is said, will employ approximately 500 people at the height of the canning season.

Construction of the building, to cost around $150,000, is expected to start in a few weeks. It will be rushed so it can be in full operation during the winter. There is a frontage of more than 500 feet on East Broadway and the property has a frontage on the Tampa Northern railway.

Details of the plans of the purchasers could not be learned. It has been known for some time, however, that the Del Monte people were anxious to locate at a good manufacturing and shipping point within the citrus belt. Business people here familiar with the California company's negotiations said the deal was far more important than the mere location of a cannery because it meant that canned Florida grapefruit had "arrived." The superior quality of the Florida product and the wide demand for it over the country, and especially in California, convinced the Del Monte packers, they said, that it would be in tremendous demand wherever offered.

TEXAS CITRUS INDUSTRY INVOLVES VAST SUM

According to the Mission, Texas, Times, the citrus industry of that state, confined to a few counties in the Lower Rio Grande Valley, involves an investment of approximately one hundred million dollars.

Federal census takers recently completed the count of citrus trees in the Valley, placing the number at 6,000,000 trees, or approximately 100,000 acres. The estimate of an investment of $100,000,000 is predicated upon a valuation of $1,000 per acre, but that figure includes also the value of packing houses, by-product plants, nurseries and allied activities related directly to the citrus industry of the Valley.

Unofficial figures indicate an increase of about eighteen per cent in plantings over the total in the ground a year ago, when the count showed 5,118,981. The actual aggregate planting during the past year was 767,896 trees, most of which were in Hidalgo county. The three leading citrus producing counties in the Valley are, in point of importance, Hidalgo, Cameron and Willacy. Only small plantings are made in other Texas counties.

With Texas now credited with plantings of 100,000 acres of citrus trees in the Lower Rio Grande Valley, it is said that not more than one-fifth of the available citrus land in the Valley is now planted.

EXPANDING INDUSTRY

An industry which is expanding at a rate which few Floridians appreciate is that of the grapefruit canning industry. Even among citrus growers themselves, there is an inadequate conception of the importance which this industry has attained.

Last year, according to best available figures, Florida canners produced more than 1,500,000 cases of canned grapefruit, yet this production was wholly inadequate to meet the demand. This year, with new plants in operation and old plants enlarged, it is predicted that the output of Florida canneries will be more than doubled. If this is true, it means that more than 2,500,000 boxes of fruit will be required to supply the cannery trade. With an estimated yield of grapefruit not in excess of 8,000,000 boxes, this would mean that approximately one-third of the available supply will be required to meet the demand of the canneries. Since the cannery grade grapefruit has never exceeded 16 per cent of the entire yield, this means that the canneries, if they are to meet the demand for their product, must go into the market and buy the choicer grades in competition with the market demand for the fresh fruit.

Certainly the canners believe that there will continue to be a growing demand for their product. In direct ratio to the realization of this belief, the grower will be the beneficiary. Disposing of his fruit on a seller's market, the grower would be able to obtain better prices for the fruit sold locally, while the reduction in the volume of fruit offered on the markets in distributing centers would tend to stimulate demand and stabilize prices.

From every angle, the growth of the demand for canned grapefruit points to better conditions for the grower.

Lee county shipped several cars of grapefruit during the month of July. This abnormal condition is said to have been due to the condition of the trees following a storm last season which caused the trees to bloom out of season and produce a crop of early season fruit. This condition was confined to a very small territory and only a few cars of the early fruit was produced.

Believe it or not, citrus groves of quality are just as valuable now as they have ever been. The wise grove owner realizes this and refuses to be stampeded into selling at a sacrifice price.

Again it is being demonstrated that QUALITY fruit is the kind—and the only kind—that really pays the grower an adequate profit.

"A little learning is a dangerous thing," in the citrus grove, as elsewhere.

IMPRESSIONS

By The Impressionist

Chairman Alexander Legge apparently made a considerable foxy pass when he made a statement which could be interpreted to the effect that the people of Kansas could go to hell. Why cuss out all Kansans because peeved at the refusal of certain Kansas farmers to adopt offhand the suggestions of the Farm Board? The reaction in Kansas against Mr. Legge and the Farm Board has been as violent as it is evidently unanimous. It will be felt distinctly in national political circles, for those prairie folks vote almost as a unit and every politician knows it.

"The Farm Board hasn't got a thing we want or need," was the statement made to the writer recently by the head of a long established, and notably successful farmers cooperative marketing organization; and that about epitomizes the attitude of a number of such.

The requirement that, before the first penny of the Board's funds is made available, a participating cooperative must sign on the dotted line to the effect that when, as, and if, the Board forms a national marketing body in the particular commodity, the cooperative will join and turn its production over to the national selling agency apparently is a big stumbling block in the way of larger participation.

We have noticed with interest that while its officials talk very favorably of the Farm Board's activities and program whenever given opportunity, there is as yet no published account of the California Fruit Growers Exchange signing up as an active participant, even though C. C. Teague its president is a member of the Farm Board.

However, a former Californian tells us that the California Fruit Growers Exchange does not engage in financing its grower-members in any way; but that activity is left as the function of local banks.

Railing in the public prints against the individualistic tendencies of farmers, Mr. Legge shows small acquaintance with the breed, even though having been the head of a concern which has sold them millions of dollars of equipment and supplies. It is our impression that generally farmers are highly developed individualists, not necessarily because they are farmers, but primarily because being individualists farming appeals to them and they therefore follow it.

Continuing public suggestions from the Farm Board to the effect that successful marketing of farmers' products must hinge upon control of production, involving inevitably an arbitrary governmental reduction of acreage in "over-produced" commodities, obtains no approval in farming circles. The thought of having to obtain a government permit before planting, or cultivating, any given farm crop is repugnant. It is so contrary to accepted American principles as to be unacceptable.

It seems likely it is contrary to sound economic principles also. Weather and pests cut a big figure in farm production. Who is capable of anticipating such things accurately? Given a crop year when governmental experts might allot a certain total acreage to a particular food crop, with all the pains and travail of sub-allotments to districts and individual farms, then what would happen if unfavorable weather and the advent of unexpected pests caused that acreage to produce very much less than its normal quota? Why the high prices resultant from the short crop would cause the consumers over the country to rise in their wrath and upset the whole machinery. Record of national legislation over a long period of years shows it generally to be directed toward protecting consumers.

On the other hand, if weather proved unusually favorable and pests unexpectedly absent, giving a consequent abnormally large yield, then the Board would be most unpopular with those farmers who could point out that they had made their plantings "under orders."

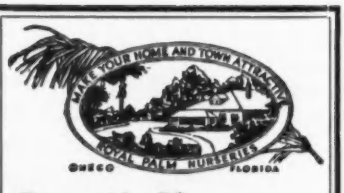
The recently published declaration of the prohibition administrator for California to the effect that all juice grapes not handled through Farm Board cooperatives will be followed closely for possible prohibition violations, plus the published news of the appearance of "night riders" visiting California grape growers who had refused to sign up when the grape acreage plan failed to go over in its originally allotted time, and the killings incident to those midnight visits, cannot rightly be laid at the door of the Farm Board. Yet they have created distrust in other districts; and will make the Board's program even more difficult of consummation.

Our old acquaintance Samuel McKelvie, the publisher of The Nebraska Farmer, once got a lot of joy out of the fact that we ripped a pair of Sunday pants, and the only pair of pants we had with us, getting out of an automobile to attend with him an important gathering at the Normal College at Wayne, Nebraska. That was before he became governor of Nebraska, and was just plain Sam McKelvie. Now how about it? The Honorable Samuel is now a member of the Federal Farm Board; and how in the nature of things is he going to be able to laugh that off?

When he was in Florida in June,

(Continued on page 26)

"Please Say You Saw It In The Citrus Industry"



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BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc. *Edited by The Growers Service Department*

VOLUME 4.—NO. 9 ORLANDO, FLORIDA, AUGUST, 1930 PAGE 1

ADVERTISING KEEPS BLUE GOOSE IN MIND

The Blue Goose fruit advertisement in the August 16 issue of the Saturday Evening Post earns the approval of Florida citrus growers even though it features products other than their own. For it is the continuity of Blue Goose advertising throughout the year, based upon a continuous supply of non-competitive fruits and vegetables, which serves to keep this well known trademark always fresh in the minds of consuming buyers.

Right now Malagas, Thompson Seedless and Concord grapes; Williams Early Reds, Duchess, Wealthies, Gravensteins and other early apples; cantaloupes, honey balls and honey dew melons; and Bartlett and other pears serve to keep that magic Blue Goose up for the attention of the trade and the buying public; and allow the appearance of Blue Goose advertising with profit, not only to the growers of these things but to all those growers whose products in their proper season go to market under the Blue Goose trademark.

There are no dull times nor off seasons for the sales and merchandising forces of the American Fruit Growers Inc. During fifty-two weeks in every year there is constructive work to do to carry forward the carefully thought out plans of the organization; and during fifty-two weeks in every year there is something suitable and seasonable to be supplied to meet the demands of a trade and a public which wants fresh fruits and vegetables at all times, and wants them of the "Blue Goose kind" whenever possible.

"If you want to get a job well done, get a busy man to do it." That is an old saw with plenty of truth behind it. A modernized version with a direct application to the subject in hand might well enough be: "If you want your fruit well sold, get a busy Blue Goose man to sell it."

ALREADY REBUILDING BURNED ALVA HOUSE

Fire of undiscovered origin on the night of August 5 completely destroyed the packing house of the Caloosahatchee Valley Growers Inc., at Alva, in Lee county. The loss was covered by insurance.

A new packing house of modern design and enlarged capacity, with fullest modern equipment will at once replace the old one. Something of a record has been set in that connection, in that preliminary details were worked out, plans made, machinery purchases arranged, and the first work of clearing the debris and starting new construction began on August 11. The new, and bigger, packing house will be ready to handle its first fruit on September 25. Because of the emergency, the fullest resources of the mechanical department of the American Fruit Growers Inc. are directed to the aid of the Lee county growers organization in order that facilities shall be ready to handle the early fruit of the coming crop.

DE LAND GROWERS MAKING PROGRESS

The recent annual meeting of Volusia Growers Inc. of DeLand, whose fruit is sold in the markets by the American Fruit Growers Inc. showed very substantial and gratifying progress.

L. F. Chapman was reelected president; A. B. Michael, first vice-president; C. N. Williams second vice-president; R. B. Woolfolk secretary and treasurer; and G. D. Wing assistant secretary and treasurer. The directors are L. F. Chapman, A. B. Michael, C. N. Williams and R. B. Woolfolk.

MIMS ORGANIZATION KEEPS TO FRONT

The prominent part played in citrus activities in that section of Brevard County by the Brevard Packing

Continued on page 2

OPTIMISTIC NOTE IS SOUNDED IN CITRUS

Greater optimism for this time of year is now to be noted in Florida citrus circles than is normal for the season. In fact, there seems to be a general consensus of opinion to the effect that the outlook for the coming season is a bright one; and that there is no reason for holding back any activities which may contribute to make it even brighter.

The evident present mental attitude in both growing and shipping circles is in sharp contrast with the feeling which pervaded them at this same time a year ago. The pessimism and uncertainty of that time have given way to a calm assuredness, which is founded upon the knowledge of the successful season which closed with the Spring shipping, and entire confidence with respect to the shipping season which will open in the Fall.

All over the citrus areas, cultivation, fertilization and spraying for pest control have been carried on with a carefulness and thoroughness unequalled since the time when the skyrocketing real estate market for a period took the attention of the growers from the care of their properties. Packing houses are being remodeled and modernized right down to date, large outlays having been made to that end.

Recent developments in connection with the quarantine situation have shown a most gratifying appreciation by officials of the U. S. Department of Agriculture for the cooperation which the great majority of Florida citrus growers have given to the department's efforts; and with the certainty of the widespread markets which will be open to Florida oranges and grapefruit next Fall the outlook is much improved.

Even though business conditions in general over the country have not been satisfactory, evidences point to a gradual betterment in many places, with a promise that by the time Florida oranges and grapefruit are ready

Continued on page 2

Adv.

BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
Sixth Floor, State Bank Bldg.
ORLANDO, FLORIDA

THEFT LOSSES

Losses to citrus growers by theft have been unduly heavy in recent years. The quarantine aided greatly in reducing such losses last season, but with the modification and lifting of quarantine restrictions, opportunities for successfully stealing fruit from the trees will increase.

Fruit stealing evidently is a developing and expanding business. Just as it increases in volume it adds to the burden of the growers; and, in some instances, it has fallen heavily upon individual producers.

Ordinary law enforcement agencies have failed to cope with enterprising fruit thieves. Systems of rewards for the detection of fruit thefts have not proven satisfactory. They have largely resulted in convictions for petty depredators, and failed in apprehending serious violators of the law. Special road patrols can be maintained only at heavy expense for the participating growers.

Litle, if any, stolen fruit finds its way into legitimate packing houses. Packing of such fruit, if it is done, is largely surrepititious. This leaves the legitimate packing houses powerless to aid the growers in tracing stolen fruit. Apparently stolen fruit largely goes into Florida cities, and is sold to grocers and fruit stands, or else is sold directly from stands operated by the thieves or their confederates.

Because of the resemblance one orange naturally bears to another, and the similarity between grapefruit of the same variety, convictions are extremely difficult, unless by good fortune the thieves are actually caught in the act.

The subject is worthy of the best thought in growing circles; and action to tighten present laws seems called for. Strengthening of the laws and penalties for trespass upon improved agricultural and horticultural properties might aid a bit in making it more difficult for the fruit thieves to carry on.

Adv.

OPTIMISTIC NOTE IS SOUNDED IN CITRUS

Continued from page 1

to move in quantity resumption of generally prosperous conditions will assure adequate markets.

MIMS ORGANIZATION KEEPS TO FRONT

Continued from page 1

Co. at Mims, was one of the things shown at the recent annual meeting.

Phil W. Roberts, the well known Brevard County grower was reelected president; A. B. Michael, first vice-president; C. N. Williams, second vice-president; R. B. Woolfolk, secretary and treasurer; and G. D. Wing, assistant secretary and treasurer.

NEW SMYRNA ANNUAL MEETING IS HELD

Review of a very satisfactory season and plans for enlarged activity during the coming shipping season featured the recent annual meeting of the New Smyrna Packing Co. at New Smyrna, the pack of which goes to market through the American Fruit Growers Inc.

Officers elected were R. E. Stevens, president; A. B. Michael first vice-president, C. N. Williams, second vice-president; E. E. Neal, third vice-president; R. B. Woolfolk, secretary and treasurer; and G. D. Wing, assistant secrtary and treasurer.

The board of directors consists of R. E. Stevens, A. B. Michael, E. E. Neal, C. N. Williams and R. B. Woolfolk.

PLANT DISEASES COST U. S. $1,500,000,000 ANNUALLY

One and one-half billion dollars annually is the average amount of the injury plant diseases do in the United States each year, says Dr. R. J. Haskell, plant pathologist of the U. S. Department of Agriculture, who is in charge of the plant disease survey of the Bureau of Plant Industry.

Dr. Haskell cites many instances of severe losses of agricultural wealth as the result of disease. "It is estimated," he says, "that the United States wheat crop is reduced by about 97,000,000 bushels a year, on the average, by rusts, smuts, root rots and other diseases. The corn crop is curtailed by approximately 271,000,000 bushels and white potatoes by about 95,000,000 bushels annually."

He points out that the very foundation of the banana industry is threatened by a fungus which causes what is known as the "Panama disease," the losses from which run into the millions. The cacao industry suffers from the fungous disease "witches broom"; the rubber plantations of British Guiana and Suriname from the "South American leaf diseases", and in Peru the stem rust ravages wheat, and a blight the potato crop.

Rust, he says, which has wiped out the coffee industry of Ceylon and Indiana has not yet reached the American tropics.

WILLIAMS OFF UPON MARKET VISITATION

C. N. Williams, salesmanager of the Florida Division, left August 1 for a round of the northern citrus markets, which probably will keep him away until after September 1.

In addition to visiting the principal distributing centers for conferences with leading trade factors there, he was scheduled to attend the conference of AFG executives in Pittsburgh on August 8, the International Apple Convention in Grand Rapids and the salesmens conference of the American Fruit Growers Inc. to be held in Grand Rapids during the time of that convention.

Returning from Maryland, where he had been on duty during the latter part of the summer, Allen W. Wilson, assistant sales manager of the Florida Division, departed upon an extensive tour of the southern citrus markets, in the intereest of the forthcoming crop of Florida oranges and grapefruit.

W. M. SCOTT BACK AFTER SUMMER PEACH DEALS

W. M. Scott, vegetable manager of the Florida Division, on the first of the month was back in Orlando, after a successful season in connec-

Fruit, too, is known by
the company it keeps

tion with peaches handled by the American Fruit Growers Inc. from summer headquarters at Macon, Georgia, and Candor, North Carolina. Except for a brief absence to attend AFG conferences and the Apple Convention, Mr. Scott expects to be busy in Orlando and Sanford in preparation for a very active vegetable season as soon as Florida vegetable shipping begins.

C. White, and W. L. Kilbe, who have been engaged in peach selling activities during the summer, are due back in Orlando about the time these lines appear in print, to take their accustomed places in the citrus sales department, and start preparations for Fall activities.

OFFICIAL CONFERENCE HELD IN PITTSBURGH

A conference of officials of the American Fruit Growers Inc. was held at the William Penn hotel in Pittsburgh on August 8 and 9, which brought together the principal executives of the organization from all parts of the country.

The conference was for the purpose of reviewing business and market conditions, certain matters relating to grading and trade practices, and other things of interest to the heads responsible for the active conduct of the business.

It was timed in advance of the sales conference scheduled for the widespread sales force of the American Fruit Growers Inc. scheduled for Grand Rapids on August 15, during the time of the convention there of the International Apple Association.

Both gatherings were called and presided over by William H. Baggs, general manager of the national organization.

ORANGE JUICE

Such weaklings, such goody-goodies, namby-pambies, those Hunter brothers, who engaged in a little endurance aviation exhibition recently. It is hard to run up advertising receipts for them.

A cigaret Company offered them $10,000 to indorse a cigaret, and that is no sum to be sneezed at either. They turned it down. "We don't smoke cigarets." Imagine, that, fliers booming away week after week without lighting up.

Then coffee men came to find out what brand of coffee Sister Irene was sending up daily to sustain them, to help keep them awake in that terrific grind. They wanted indorsement also. But alas, the boys don't drink coffee. Well, what do they find in life anyway?

The lads did not indulge in bootleg. The drinks that went aloft were milk and orange juice. Now there is something for the dairymen and the citrus fruit growers to advertise. Drink milk and orange juice and become a record-breaker.

These Hunter boys seem to have some of the habits of Lindbergh. — Miami Herald.

WELSH TO EUROPE IN AID OF EXPORT TRADE

J. G. Welsh, New York, manager of the export department of the American Fruit Growers, Inc., sailed from New York July 19 to make a survey of market conditions in Great Britain, the Scandinavian countries and continental Europe. Mr. Welsh's visit will be for the purpose of developing new markets in these countries, in addition to the large number now utilized for American fresh fruit, and also to secure first-hand knowledge of European crops and business conditions.

Adv.

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CITRA, Citra Fruit Company.
COCOA, American Fruit Growers Inc.
CRESCENT CITY, American Fruit Growers Inc.
DE LAND, Volusia Growers Inc.
DE LEON SPRINGS, Theodore Strawn Packing House.
FELLSMERE, Fellsmere Growers Inc.
FORT PIERCE, American Fruit Growers Inc.
FROSTPROOF, West Frostproof Packing Co.
GOULDS, Goulds Growers Inc.
HAINES CITY, American Fruit Growers Inc.
LAKE JEM, American Fruit Growers Inc.
LAKELAND, Lakeland Growers Inc.
LAKE WALES, Lake Wales Fruit Packers Inc.
LEESBURG, Lake County Growers Inc.
MAITLAND, American Fruit Growers Inc.
MIMS, Brevard Packing Company.
NEW SMYRNA, New Smyrna Packing Co.
OCOEE, American Fruit Growers Inc.
ODESSA, Odessa Lake Region Growers Inc.
OZONA, American Fruit Growers Inc.
PALMETTO, American Fruit Growers Inc.
PANAMA CITY, William L. Wilson Packing House.
SUMMERFIELD, American Fruit Growers Inc.
VALRICO, Valrico Growers Inc.
VERO BEACH, American Fruit Growers Inc.
WABASSO, Deerfield Groves Inc.
WALSINGHAM, (P. O. Largo) American Fruit Growers Inc.
WAUCHULA, Wauchula Packing Co.
WEIRSDALE, Weirsdale Packing Co.
WINTER HAVEN, Winter Haven Growers Inc.

American Fruit Growers Inc.

Orlando - - Florida

DEPENDABLE AFG QUALITY

Adv.

1. Citrus Fruit, Packing

Interesting Historical Sketch of Orange Box Industry

"Pioneer Marketing of Fresh Fruits and Vegetables," a historical sketch builded largely around the evolution of the processes of packing Florida citrus fruit, was written by R. W. Bennett, secretary-manager of the Standard Container Manufacturers Association.

Incidentally, one of Florida's best known manufacturers, Mr. Harry L. Askew, is president of this organization which comprises all the more important crate manufacturers in Florida, Georgia, and Alabama.

Without seeking to reproduce in its complete form this highly illuminating and most interesting brochure, we are going to present the high spots in Mr. Bennett's work for our readers. We believe there is much in it which every citrus grower will find of interest.

Introducing his subject Mr. Bennett writes:

"Mr. H. B. Stevens, general manager of the Estate of John B. Stetson at DeLand, is one of the pioneer orange growers of the state. He had charge of the Bishop-Hoyt grove at Citra in the seventies, probably the largest and finest grove of its time. We are indebted to him for the following statement:

"One night in the fall of '75 Mr. P. P. Bishop and Mr. E. Bean, his brother-in-law, were waiting in the warehouse at San Mateo for the boat to take them to Jacksonville to attend a fruit growers meeting. While waiting there were some loose oranges in the warehouse and they went to piling them up and measuring to see what would be the best size box to put them in for shipment.

"The only box in use at that time was called the Mediterranean box, which as I recollect was 9x14x36, an unwieldly and unsatisfactory box. After their experiment in measuring the oranges Mr. Bishop and Mr. Bean decided to recommend to the growers meeting a box 12x12x27 which was done and adopted at that meeting, and it certainly has been a very satisfactory box."

"Fifty years ago," writes Mr. Bennett, "there were few commercial groves in Florida, none of large extent." Principal plantings were adjacent to navigable streams as boats in large measure furnished the only means of getting crops to market.

Grapefruit at this time was almost unknown and was entirely unmarketable.

Taking a page from his personal experience Mr. Bennett tells of how his father purchased an established general store in 1879 near the headwaters of Ocklawaha River navigation. He adds: "Every box, barrel and container of suitable size and condition in which goods were received was carefully stored; and adequately ventilated, were our first citrus fruit shipping containers. The oranges were thoroughly wiped and dried before packing for their long trip by boat on the winding Ocklawaha and the placid St. Johns to Jacksonville for transfer to boat or train to New York. There was no refrigeration."

The Bartow "Informant" of July 21, 1883, stated that the crop of oranges as indicated by careful survey, was found "much larger than anticipated and quite FIVE MILLION OF ORANGES" (not boxes of oranges). The paper took occasion to call editorially upon the citrus growers to look after their interests and take steps to secure sufficient materials in which to handle the shipment of this crop adequately. It called attention to the fact that there was not a mill in that section which could make an orange crate even if called upon to do so.

About 1880 E. Bean of Jacksonville designed the orange box with the same dimensions now in use, but much of the material had to be shipped in from Maine. The material coming from Bangor gave the name to the shipping boxes.

In 1888 Dr. J. L. Kelley of Gainesville came into the picture and through a process of veneering which he developed he was able to eliminate the necessity of having box materials shipped all the way from Maine and secured for his mill practically the entire output of box sides used in the then existent Florida crate mills.

John W. Leslie who came to Florida from Michigan was one of the pioneer crate manufacturers of the state starting a plant at Center Hill in the fall of 1888. Several others opened shortly after. The Warnell Lumber & Veneer Co., at Plant City and Pomeroy and Baum at Oxford operated between 1891 and 1895, when the devastating freezes put them temporarily out of business. In 1900 the Warnell plant reached a total production of 100,000 boxes.

W. J. Pierpont founded the Pierpont Manufacturing Company at Crescent City in 1893, but disposed of their holdings after the freeze of '94.

The Wauchula Manufacturing Company was formed in 1902, while A. C. Starbird organized his com-

pany in 1900.

The panel head now in use by the majority of box manufacturers was designed by Mr. Ainslee in the early nineties and its consistent use since that time is sufficient proof of its merit.

And with the steadily increasing development of the box business and the constantly growing crop it was natural that improved machinery should come into use and from 1900 innovations have been constantly eliminating much of the tedious hand work which was required in the early stages of the industry.

Nailing machines were first put on the market by L. B. Skinner, Dunedin.

Visualizing the development of the box industry in one short paragraph Mr. Bennett stated that in the twenty years period from 1903 to 1923, Florida citrus production increased from 3,000 to 45,000 carloads. And it speaks well for the organization of the box manufacturing business when he states that never in that period has there ever been a serious shortage of packages for marketing Florida fruits and vegetables.

Probably nothing will serve better to picture the tremendous development for the citrus industry of the state than to tell of the worry felt by this Bartow "Informant" when it became known that 40,000 crates would be required to handle the crop of 1883.This writer dwelt at some length upon the vast amount of lumber and nails which would be required to manufacture this tremendous volume of crates, incidentally citing the enormous cost of such an order—a figure amounting to $5,000.

In discussing this feature of Mr. Bennett's historical sketch with Mr. Harry L. Askew, of the Roux Crate Company, the writer asked how long it would take his plant now to produce the 40,000 boxes which were proving such a source of worry back in 1883. Mr. Askew stated that it would represent three days output in his company's mill at the present time.

And for purposes of comparison with the 40,000 box crop which had our fathers so muchly disturbed over the possibility of marketing it we are showing below the crop reports for Florida over the period of the past ten years:

Seasons	Oranges Boxes	Grapefruit Boxes	Total Boxes
1918-1919	5,700,000	3,200,000	8,900,000
1919-1920	7,000,000	5,500,000	12,500,000
1920-1921	8,100,000	5,100,000	13,200,000
1921-1922	7,300,000	6,000,000	13,300,000
1922-1923	9,700,000	7,200,000	16,900,000
1923-1924	12,400,000	8,000,000	20,400,000
1924-1925	11,000,000	8,200,000	19,200,000
1925-1926	8,200,000	6,500,000	14,700,000
1926-1927	9,600,000	7,000,000	16,600,000
1927-1928	7,100,000	6,500,000	13,600,000
1928-1929	13,900,000	9,300,000	23,200,000

All of which serves to conclusively demonstrate the enormous development of Florida's citrus industry—and the end is not yet.

Texas Citrus Exchange Adopts Brogdex Method

The Texas Citrus Fruit Growers Exchange has formally adopted the use of Brogdex on the fruit to be sent out hereafter under the brands of the co-operative Texas marketing organization.

This decision was recently made by the Texas Exchange following a visit of John H. Shary, president of the Exchange to Florida and the sending of representatives to California to investigate the effects of the method in that state.

Brogdex will be handled in Texas by the Brogdex Company of Texas, of which John H. Shary is vice-president. Robert E. Gregg has been named as President; T. M. Melden, secretary, and L. N. Olmstead, treasurer.

So important is this introduction of Brogdex to Texas considered, that the Mission Times, a leading publication of the Texas citrus belt, on August first issued a four-page section devoted entirely to the announcement of the action of the Texas Exchange and review of the uses of Brogdex in Florida and California. The Times states that Texas growers expect by the use of this method to be able to meet and successfully compete with the citrus fruits grown in any other section.

B. C. Skinner of Dunedin, president of Florida Brogdex Distributors, Inc., has just returned from a visit to the Texas and California fields.

CHRONOLOGY OF UNWELCOME IMMIGRANTS

Our foreign insect pest chronology antedates the Declaration of Independence. The codling moth, the oldest example of its kind in the country, is supposed to have appeared in 1750, it is stated in a report made by a group of scientists composing the entomology section of the National Research Council Science Advisory Committee, which is formulating a science pattern for the Chicago World's Fair in 1933.

The next unwelcome immigrant from the insect world to make its appearance was the Hessian fly in 1779,

Chaco FERTILIZER

Our experience is that Florida soils need organic fertilizers. Chaco Fertilizer is mostly organic. You can see the difference.

CHASE & COMPANY
Sanford, Florida

the entomology report states.

In 1834, the year after Chicago became a city, the elm leaf beetle, hitherto unknown here, appeared.

It was not until a quarter of a century later that another pest, this time the lowly cabbage worm began to worry our farmers. This was in 1860.

Nine years later, in 1869 the country was introduced to the gypsy moth, first seen in Massachusetts. The gypsy moth, which originated in Europe also made its way to Japan at this time.

Ten years passed before we had another pest, the San Jose scale, which found its way from China. Hitherto, the insect emigration had all been of European origin.

Another ten-year period or thereabouts elapsed until the brown-tail moth, another European product, appeared in 1890.

In 1892, the Mexican cotton boll weevil began its migrations.

Beginning with the present century, insect pests came in relatively quick succession, beginning with the carrot rust fly, a Mexican suspect, in 1901, followed by the alfalfa weevil in 1904 from Europe and the European earwig in 1909.

In 1914 the European pine shoot moth began its depredations in America.

Three enemies from the insect world all appeared here in one year, 1916, in which Japan is first recorded as the source of one of our introduced pests. In that year the Japanese beetle was recognized and the first growers observed a new menace, the Oriental fruit worm, also from Japan. The operations here of the European corn borer was also a 1916 discovery.

Egypt is suspected of being the home of the pink cotton boll worm of 1917, and Japan sent us another pest, the Asiatic beetle, in 1920. In that same year, the Mexican bean beetle crossed the border.

In 1922 the Australian tomato weevil appeared on the American scene.

Five years later, in 1927, we got the Mexican fruit fly and in 1929, the so-called Mediterranian fruit fly.

It is proposed to portray this array of insect pests as part of the science exhibit at the Chicago exposition by means of a large world map and models of each of the invading insects. Colored tapes will connect the insect in that part of the United States where the pest occurs with the country of its origin.

Make sure of the

PROFIT

from that **Big Crop**

in sight

FLORIDA citrus groves promise an unusual crop. They've had plenty of rain, but not enough food to make the fruit size up this summer.

The exceptional crop in sight has taken up more than the usual amount of plant food. If it is to come through with quality fruit that commands the best prices, it'll need plenty of quick-acting nitrate—Chilean Nitrate of Soda—that gives bigger growth to citrus fruits.

Two to five lbs. of Chilean Nitrate per bearing tree NOW will insure bigger, quality yields. Non-bearing trees will thrive better with one-quarter to one lb. each.

Take a look at your grove. If the foliage has that hungry, yellow look, the trees need a meal of natural nitrate right now. Its cost is small and the crop will pay it back aplenty when it goes to market. Order now from your fertilizer dealer. Ask for Chilean Nitrate and make sure you get it. If your dealer can not supply you or if you want our advice regarding your trees, write us.

1830-1930—A hundred years ago Chilean Nitrate was first used in American agriculture.

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Profitable Crops

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In writing please refer to Ad. No. A-25

CITRUS COMMENTS

(Continued from page 11)

one direction and permit the tree to accumulate the balancing materials it needs for fruit maturity. This means, probably as an automatic result, the concentration of cell sap within the tree and therefore directly we will get a greater amount of plant food within the tree which it can use to advantage.

Occuring at the same time in the fall of the year,we have colder weather and less moisture. Moisture evaporation from both soil and tree will leave the remaining solutions more concentrated than during the period of summer rain. Colder weather cuts down growth activity and will affect internal tree activity but it does not apparently delay the formation of maturity materials needed by the tree for fruit maturity and setting of future bloom buds. It seems rather to have the valuable property of leaving well fed trees in better physical condition and actually stepping up maturity values. Under such conditions the internal solution in the tree (cell sap) is more concentrated, therefore is a thicker, heavier liquid and less subject to shrinkage thru evaporation. In other words, the cells within the tree remain full of the more concentrated sap and will therefore prevent wilting for a longer period of time. This process has a close resemblance to fattening a thin turkey for a Thanksgiving dinner.

Thus while we step up tree activity (not necessarily tree growth) we also increase resistance to wilting. Within the soil itself, increased drying will, of course, affect tree roots in time, but this period is deferred because of materials already accumulated within the tree. It is up to us to "beat the dry weather to it" as it were, each fall and secure this result before the soil dries out to the dangerous point.

There is an attendant danger that is obvious to any observer but which we don't understand at present. Absorption of soil solution by the tree is probably a mechanical exchange of moisture between two liquids on each side of a more or less porous membrane. The moisture passes from the thinner liquid thru the membrane to the more concentrated and thins it down, until about the same concentration is attained in both liquids. If this explanation is true, we can easily understand why, when the soil gets drier than the cell sap of the tree, that no moisture can pass into the tree and that the smaller rootlets, that have no impervious protection against moisture passing in or out, will soon die.

If this soil condition does occur, which often happens in the spring of the year, the only safety factor left us is the accumulated material within the tree itself, including the leaves, buds and twiggs, or irrigation. If such an accumulation of food material has been aided by fertilizing and cover-cropping, trees seem to recover from excessive drying quickly and with surprisingly little injury.

All of these factors are inter related and it is easy to understand their importance. It takes the whole procedure of growing fruit out of the humdrum status of just more work and gives it an interest that is both fascinating and profitable.

Fruit quality is very indirectly affected by cultivation and cover-cropping. It is more often a varital characteristic. The difference secured therefore would be largely variations that might occur within the limits of the variety. The future holds much more prospect of interesting developments along this line than the past. Fruit quantity, however, is a different thing entirely. It is directly affected by the factors of over-cropping and cultivation. Individual grove location and the conditions surrounding the grove would have to be considered. Quantity production is a forcing game. If left up to the fruit variety only average results can be expected. If backed up by intelligent forcing, however, a higher rate of income per acre is the result. It is something to work for but "one must know his stuff", both figuratively and actually.

The last indirect consideration that we will take up at this time is the one of frost resistance. Here again the effect is one apparently of concentration of liquids. For example, pure water is supposed to freeze at 32° F., salt water at a lower temperature. Water and alcohol or glycerine are used in the winter to prevent freezing radiators in the north. The tree sap is not a pure liquid. The degree of concentration would therefore affect its freezing

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point. In the winter a healthy tree is bound to have a rather concentrated sap, rich in plant food elements and their combinations. Such a tree is harder to freeze than one not so protected. Is this a reasonable explanation? We believe it is because it seems to work in practice.

In closing this reference to cover-cropping and some of its more important bearings for us, mention of the present move toward over-cropping is of especial importance and timely. Our State Experiment Station, under the original and continued leadership of Dr. Watson, has created a greater interest than we have ever had before in the use of legumes. This is a wonderfully helpful contribution to citrus culture and is a big step in the right direction. The use of legumes can be heartily recommended. What we need, and have needed, is cover cropping and more cover crops.

Can You Pronounce—

From time to time we will have a number of ornamental names with their preferred pronunciation in trade circles listed in this column. Cut them out and you will have a pronouncing dictionary of PLANT NAMES, including descriptive terms.

Acclimatize—(a-kli-ma-tiz)
Acer—(a-ser)
Achillea—(ak-i-le-a)
Achimenes—(a-kim-e-nez)
Achyranthes—(ak-ir-an-thes)
Aconite—(ak-o-nit)
Aconitum—(ak-o-ni-tum)
Acorus—(ak-o-rus)
Aculeate—(a-ku-le-at)
Acuminate—(a-ku-mi-na-ta)
Lanuginosa—(la-nu-ji-no-sa)
Lapageria—(lap-a-je-ri-a)
Larix—(la-riks)
Larpentae—(lar-pen-te)
Larva—(lar-va)
Larvae—(lar-ve)
Lastrea—(las-tre-a)
Latania—(la-ta-ni-a)
Lathyrus—(lath-i-rus)
Latifolius—(lat-i-fo-li-us)
Verbena—(ver-be-na)
Vernalis—(ver-na-lis)
Veronica—(ve-ron-i-ka)
Verrucosa—(ver-ru-ko-sa)
Verschaffeltii—(ver-shaf-fel-ti-i)
Versicolor—(ver-si-kul-or)
Verticillata—(ver-ti-si-la-ta)
Vexillarium—(veks-i-la-ri-um)
Viburnum—(vi-ber-num)
Victoria—(vik-to-ri-a)

HEARINGS ON REGULATIONS UNDER THE PERISHABLE COMMODITIES ACT

Public hearings on the proposed rules and regulations of the Secretary of Agriculture under the Perishable Agricultural Commodities Act of 1930 will be held by representatives of the Bureau of Agricultural Economics, U. S. Department of Agriculture, in the South Water Market club rooms, 1144 West 14th Street, Chicago, Ill., at 2 p. m., August 11, and in an auction room, Erie Railroad, Pier 20, North River, New York City, at 2 p. m., daylight-saving time. August 20.

These are public hearings to which all interested members of the trade are invited. Any interested person who is not able to attend these meetings is invited to mail to the Bureau of Agricultural Economics, Washington, D. C., any suggestions relative to the proposed rules and regulations. Such suggestions should be in the hands of the bureau by August 25 in order that the new regulations may be issued at as early a date as possible.

THE MODERNS

Maid: "You know the old vase you said had been handed down from generaiton to generation?"

Mistress: "Yes."

Maid: "Well, this generation has dropped it."

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"Please Say You Saw It In The Citrus Industry"

Growers & Shippers League, Fla

Functions of the Growers and Shippers League of Florida

Paper Read By J. Curtis Robinson, Executive Vice President of the Growers and Shippers League of Florida at the Annual Farmers' Week, Thursday, August 14, 1930, at Gainesville, Fla.

The Growers and Shippers League of Florida, which I have had the honor to serve since its organization, was organized in December 1923 by the leading growers and shippers of citrus fruit and vegetables of the state.

At that time there were several matters pending involving refrigeration rates and other accessorial costs for distribution of our citrus fruits and vegetables, which would have inflicted a burden upon the entire perishable industry in Florida. It was realized the cost to one individual or shipper to oppose these proposed increases in transportation charges would be too heavy for one to bear alone. It was also realized that it was unfair for one individual shipper or grower to bear the burden and expense of opposing any proposed change in transportation costs which affected the state as a whole, but that this burden and expense should be born by all the growers and shippers thru one central organization because all growers and shippers of the State would participate in whatever penalties were imposed or benefits were obtained.

Consequently the League was organized for the purpose of protecting the mutual interests of growers and shippers of citrus fruit and vegetables along transportation lines only, and aside from marketing. It has fully justified its existence and I am very proud of its accomplishments, the benefits of which have accrued to all the growers and shippers of the state, whether members of the organization or not.

The League is a non-profit, non-stock corporation. Its membership is in three classes—shipping members, that is citrus or vegetable growers and shippers — sustaining memberships, which are taken by Chambers of Commerce, Crate Mills, Fertilizer Companies and such allied industries and—Contributing memberships taken by some one who wants to help us in our work from time to time, but not as an annual sustaining member.

A fair and reasonable freight rate and other transportation charges and regulations for the distribution of the perishables produced in our state, one which will enable us to compete in the markets of the United States on a parity with the perishables produced in other states, is absolutely fundamental to a solid foundation for the perishable industry of Florida. Without such a strong foundation we may expect to survive for a while, only ultimately to fade away, as the crumbling sands of a poor foundation.

When the League was organized, Florida had been shipping oranges in Commercial quantities for over 40 years and distributing them under an antiquated rate structure, while California, our chief competitor, had enjoyed a blanket or postage stamp rate since at least 1885, by which I mean the same cost in cents per hundred pounds from points of production in California to Denver, Colorado and east. The California rate had been established by the railroads to meet competition with Florida and foreign oranges. The rate of $1.25 per 100 pounds originally published, was later reduced, early in 1907, on the basis of increasing the consumption and helping out the grower. This rate was subjected to two percentage increases and one percentage reduction in 1922.

The rate structure under which Florida was distributing its oranges in 1923, in competition with California, was one established in the old days, prior to 1908, when production was small and when groves were first located in the northern part of the state largely along or tributary to the waterways. This rate structure had been slightly changed by decision of the Interstate Commerce Commission and we had both carload and less than carload rates. This was the case also as to rates on vegetables. The system, of basing rates upon proportionals from points of production to Jacksonville, for beyond, plus a proportional rate for the haul beyond Jacksonville, to make the thro rate, had not been changed. These rates, altho slightly changed from the original, by several decisions of the Interstate Com-

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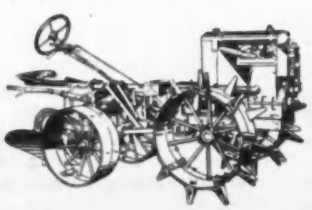

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merce Commission, still left in effect the Jacksonville combination basis of rates, made largely upon distance. The Florida rates, like the rates from California, had been subjected to two percentage increases and one 10% reduction in 1922.

The citrus and vegetable industries had, only shortly before the League was organized, been confronted with an attempt by the carriers to increase the refrigeration rate from Florida by as much as $6.00 to $9.00 per car, depending upon destination.

Before the organization of the Growers and Shippers League there had been in Florida other organizations initiated for purposes similar to those to be undertaken by the League, which, because of lack of adequate support had been discontinued. When its was realized what splendid accomplishments had been made, in California and elsewhere, by centralized traffic organizations, the growers and shippers of our state decided their investments were just as important to them, and this resulted in the organization of the League.

The leaders who were responsible for the organization of the League made a careful study of the causes for the ultimate lack of support of previous similar Florida organizations. They came to the conclusion that while the other organizations were inaugurated for the purpose of looking after traffic and transportation problems, their activities rapidly spread until they undertook to perform a variety of duties thus dividing their efforts to such an extent that many felt it unnecessary longer to give their support. The previous organizations did much good work and are entitled to credit for demonstrating what could be done. In organizing the League therefore, it was explicitly provided we were to look after traffic and transportation matters only, without in anyway indulging in questions of marketing.

I attribute in a large measure the continued hearty support of our work by both citrus growers and shippers who are members of the Clearing House and those who are not, and by our leading vegetable shippers, to the foresight of the organizers of the League in adopting a policy which has been strictly adhered to, of only undertaking to handle matters affecting the interests of our members along transportation lines, aside from marketing. In this way all our efforts can be concentrated on this one very important and fundamental subject and by all shippers and growers co-operating together your transportation interests can be protected.

Our first and most important case was a complaint, brought by the State Railroad Commission in the spring of 1925 upon evidence presented them by the League, seeking a complete readjustment of our freight rate structure and a material reduction in the line haul on citrus fruit and vegetables. After the complaint was filed the League assumed the burden of presenting the evidence. The Interstate Commerce Commission rendered its decision as to future citrus rates July 10, 1928. The reduced rates went into effect Nov. 9, 1928. The reduction averages approximately $15.68 per car. It amounts to as much as $1,000,000 per annum on a normal crop. This means Florida has saved in the last two years in its transportation bill on citrus approximately $2,000,000. This amount of saving will be cumulative as the years go by. If we have a crop of 20 million boxes this year our transportation bill should be about a million dollars less than in 1927-28 season.

Our next largest case was an investigation of Refrigeration rates from Florida to Eastern States. The carriers had made two previous attempts to increase our refrigeration rates without success. They were still of the opinion they should be increased and appealed to the Commission to make another investigation. The Commission complied. The result was to order reductions to eastern territory averaging $10.50 per car on citrus and vegetables, not only this, but precedents were established as to the factors involved in going to make up the rates for refrigeration which will doubtless form the basis of all refrigeration rates for years. This reduction was made effective May 15, 1929. A large percentage of our citrus and vegetables go to eastern territory. The reduction will surely approximate at least $450,000.00, annually. The League and its counsel had an active part in this case.

One of the most important matters on which the League has been working for sometime and on which several conferences have been held with high operating and traffic officials of Florida Lines is to reduce our freight schedule and have made effective 4th morning delivery in New York instead of 5th morning. We have received encouragement and feel confident we will be permitted to announce before the beginning of next shipping season that 4th morning delivery in New York will be put into effect next season.

In my last annual report I estimated that through the activities of the League we had saved for our growers and shippers in freight and refrigeration charges approximately $2,500,000.00 last year, which on an annual investment of less than 1% is a very satisfactory return on the investment.

EMPHASIZES DISTRICT OF COLUMBIA REGULATIONS FOR PLANT SHIPMENTS

Regulations governing the movement of plants and plant products into the District of Columbia require that each package must have attached a certificate of inspection signed by the State nursery or horticultural inspector of the State from which the plants were shipped, indicating that the nursery from which the plants were taken had been inspected within one year prior to the date of shipment. This inspection certificate is required for all woody and herbaceous plants, including bulbs, whether field-grown or greenhouse-grown. Any plant material shipped into the District of Columbia in violation of these regulations is subject to destruction, treatment, or return to the point of origin at the expense of the owner or shipper.

The Plant Quarantine and Control Administration particularly calls to the attention of florists and ornamental horticulturists the fact that the District of Columbia regulations apply to bulbs and herbaceaus plants, and reminds them that the nursery inspection officers of many of the Northern States do not inspect and certify such material unless specifically requested to do so. The administration solicits the earnest cooperation of nurserymen, florists, and other establishments and individuals in the efforts of the department to prevent the dissemination, through uncertified shipments, of dangerous plant diseases and insect pests.

Oop!

Ring Lardner, who once telegraphed his regrets that he couldn't attend a dinner because it was the children's night out and he had to stay home with the nurse, offered this alibi in dodging another affair:

In response to an invitation to a press-agents' dinner Lardner wired: "I wish I could make it, but I cannot, and it is a matter of real regret, as I have always yearned to be at a banquet where most of the speeches were in a foreign tongue."—Daily Mirror.

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IMPRESSIONS

(Continued from page 14)

J. S. Crutchfield, president of the American Fruit Growers Inc., told us he thought there was a lot of unnecessary criticism of the members of the Farm Board; that in his opinion they were the finest and ablest men who could have been named to administer the Agricultural Marketing Act. That, we believe, is so. Yet they find themselves in unenviable positions, much as the Archbishop of Canterbury might if led into attempting to subdue a greased pig at a show at the Crystal Palace.

Ex-President Coolidge has the gift of saying a whole lot in very few words. In one of his recent articles in The Herald-Tribune he said, referring to the Federal Farm Board: "If at the outset of its career the action of the Farm Board demonstrates to the country that even the United States Treasury cannot maintain a fixed price for farm produce, while the lesson may be expensive, it will be worth all it costs. We shall learn through experience that that kind of Farm Relief will not work."

And now J. A. (Uncle Jim) Wilson, manager of the Homeland Citrus Growers Association has passed. From time to time in these columns we have mentioned his work with praise. We were compelled to regard the average net returns he got for the Homeland pack, which is practically all seedling oranges, year after year as a truly remarkable achievement. He was a sort of benevolent despot in things citrus in the Homeland community; and the growers there profited much by letting him have his own way. Just a short time prior to his death he celebrated a Triple Golden Anniversary, fifty years of married life, fifty years in the citrus business, and fifty years residence in Seven Oaks, his home. If inclined to think that all the progress in citrus has come in recent years, and that the old-timers were hopelessly backward, a study of Uncle Jim Wilson's performances ought to be enlightening.

Roy Trafford the well known grower of Cocoa, tells us that what makes the water off our Florida Atlantic coast beaches so "uninhabitable" at times in July and August is the cold Baffin Current working southward in volume inshore of the Gulf Stream. That is why it is so easy some days to cool one's anatomy effectively and thoroughly in a few minutes in the surf.

GRAPEFRUIT CANNING A STEADILY GROWING INDUSTRY

That the canning of grapefruit is developing into an industry of sizable proportions is indicated in a bulletin which has just been issued by the Foodstuffs Division of the Commerce Department. During the past ten years, the bulletin shows the output of canned grapefruit from the United States and Porto Rico has risen from 2000 cases to approximately 1,850,000.

Florida is the chief producing area in the United States, although small amounts are packed in Texas, Georgia and North Carolina. Approximately 10 per cent of total production goes into export trade, Canada and the United Kingdom being the largest foreign buyers of this product.

In both the domestic and foreign trade canned grapefruit is used as a substitute for the fresh fruit. It is put to the greatest variety of uses in the United States, being employed as a breakfast fruit and in the preparation of fruit salads, fruit cups, and other fruit preparations. It is used in about the same ways in Canada, but in the United Kingdom its use is confined almost entirely to "hors d'oeuvres" before the mid-day and evening meals, it not being the general custom in that country to use fruit for breakfast.

The distinctive flavor of the grapefruit which has made it so popular in the United States and to a lesser degree in the United Kingdom has militated against its use in some foreign countries, according to the bulletin.

Together with grapefruit, considerable quantities of grapefruit juice have been canned in Florida during recent years. Most of this has been consumed in the United States although some demand has been created in Canada and the United Kingdom.

PACKING PLANT AT ALVA BURNS WITH LOSS OF $20,000

The packing plant at Alva, operated by the Caloosahatchee Valley Growers, Inc., was destroyed by fire on August 6. The loss is estimated at $20,000 covered by insurance. More than $4000 had just been spent in modernizing the plant, including construction of additional coloring room facilities which brought this to a capacity of eight cars. The plant proper had a capacity of four cars.

The structure was of frame with galvanized walls.

The Caloosahatchee Growers are affiliated with the American Fruit Growers Inc.

Immediate reconstruction is planned, according to E. M. Adams, president of the Caloosahatchee Valley Growers. Gilmer Heitman of Fort Myers is one of the larger stockholders. Cause of the fire has not been determined.

MAKING IT HOT

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By E. D. Vosbury, Formerly Scientific Assistant, Office of Horticulture, and T. Ralph Robinson, Physiologist, Office of Horticultural Crops and Diseases, Bureau of Plant Industry

(Reprinted from Farmer's Bulletin No. 1343 U. S. Dept. of Agriculture)

(Continued from last issue)

Grove Management—Planting the Grove—Clearing

The newcomer in a citrus section should consult growers of long experience in his locality and be guided by their advice in fertilizing his grove. He should also experiment for himself in the use of the various fertilizers, so as to determine the best combination and quantities for his conditions, which may differ from those even in adjacent groves. No cultural problem is more important or demands closer study on the part of the grower than that of fertilization.

The necessary elements of plant food which must be added to the soil in fertilizers are nitrogen, phosphorus, and potash. Nitrogen plays an important role in the production of new wood and leaf growth. Deficiency of nitrogen is indicated by yellow foliage and stunted growth of the tree. Excess of nitrogen, especially the organic forms, often results in what is termed die-back, which causes the fruit to crack and drop off, or, in mild cases, to become coarse and puffy. The principal sources of inorganic or mineral nitrogen are nitrate of soda and sulphate of ammonia. The former is very quick in its action, while with sulphate of ammonia the effects are much slower. New synthetic sources of nitrogen, such as calcium cyanamide, ammophos, leunasaltpeter, urea, calurea, etc., are gradually coming into use, but their place in citrus fertilization is still a subject for experimentation. The chief sources of organic nitrogen are cottonseed meal, tankage, dried blood,, fish scrap, and other plant or animal material. These are slower in their action than most inorganic nitrogenous fertilizers, and they must be used with care to avoid die-back. Nitrogen is also supplied to the soil in considerable quantities by velvetbeans, cowpeas, and other leguminous cover crops.

Phosphorus is considered necessary for the proper development of the fruit. The chief sources of this element are bone and superphosphate (acid phosphate).

Basic slag, also known as Thomas phosphate, and ground raw phosphate rock, or "soft phosphate," are sometimes used as sources of phosphorus with good results on very heavy acid soils rich in humus. On nearly all Florida citrus soils, however, their action is too slow to make them either cheap or desirable fertilizers. Soft phosphate, finely ground, may be used with good results by being composted with peat or muck, to which mixture small amounts of manure are added as an inoculant. In old groves where cover crops can no longer be grown this is an effective and economical way of maintaining the humus content of the soil.

The common sources of the element potassium are sulphate and muriate of potash. The sulphate form is commonly preferred, though the muriate may be occasionally substituted without injury.

During the war with Germany potash became very scarce, and growers who formerly used 10 per cent or even more of this element in their fertilizer mixtures were unable to procure such a large percentage. A reduced quantity of potash has now been used for several seasons, but without apparent detriment to the trees or the fruit. As a result of their experience most citrus growers are continuing the application of this reduced amount of potash, using from 5 to 8 per cent of this element instead of the much greater proportion formerly applied.

Fertilizers for Young Trees

In Florida the usual practice is to fertilize young citrus trees three or even four times annually. The first application is made in the spring at the time the first flush of growth starts. One or two applications are made in summer and the last early in September. The spring and summer applications contain about 5 per cent of nitrogen, 6 to 8 per cent of phosphorus, and 2 or 3 per cent of potash. For the last application in the early fall the nitrogen is reduced to 2 or 3 per cent, in order to permit the trees to harden up in good shape for winter.

Fertilizers for Bearing Trees

With bearing trees relatively less nitrogen is used than with younger trees, as it is not desirable to force wood growth. Three applications a year are usually made with mature trees. The spring and summer applications contain 3 or 4 per cent of nitrogen, 7 or 8 per cent of phosphorus, and 5 to 8 per cent of potash. The last application for bearing trees in Florida is made between October and December and contains but 2 or 3 per cent of nitrogen or the nitrogen may be entirely omitted and the same amounts of the other elements used in the spring and summer applications, except that the potash may be increased where it is desired to make trees resistant to injury by cold.

In the northern range of citrus growing, where there is danger of winter killing, the best practice is to fertilize only twice a year, increasing the quantities applied in the spring and early summer, but applying no fertilizer after June or July. This is the practice followed by the Satsuma growers of the Gulf coast.

Bearing orange trees when 10 years old receive from 15 to 30 pounds of fertilizer a year. This quantity is increased as the crops become larger. Large bearing trees receive from 3 to 5 or more pounds of fertilizer annually. Many growers fertilize grapefruit somewhat more heavily than oranges.

The quantities of fertilizer used will vary with the type and fertility of the soil. Those specified above are applicable to soils of medium fertility, such as the best class of Florida high pineland. On lighter, sandier soils the quantity of fertilizer is increased 25 per cent or more, while on rich hammock soils it is reduced 25 per cent or even more. On rich soils it is also often advisable to reduce the relative proportion of nitrogen used in the formula. Where nitrogen-collecting leguminous cover crops are grown the quantity of commercial nitrogen applied may also be somewhat reduced.

Trees that have been overfertilized may become affected with die-

back. Die-back is nearly always combined with excessive growth and overfeeding, in contrast to mottle leaf or frenching, which affects weak,insufficiently nourished trees. The fruit on trees affected with die-back is coarse and puffy, or is "ammoniated," as the grower would say, and the young growth is abnormal, showing multiple buds, gum pockets, and drooping, curved twigs. Where such a condition exists, the quantity of fertilizer should be reduced and cultivation stopped until the trees recover their normal condition.

Sometimes die-back is due to hardpan, poor drainage, or other unfavorable soil conditions, which must be remedied before the trees can permanently recover.

Copper sulphate (bluestone) has been found an effective aid in correcting some forms of die-back. It should be used in finely granulated form, well distributed over the root-feeding area, not closer than 1 foot from the trunk of the tree. The dose should vary from a few ounces for young trees to a maximum of 3 pounds for large trees.

Methods of Applying Fertilizers

Fertilizers should be spread evenly over the ground and then cultivated into the soil. Some growers broadcast their fertilizer by hand, but a fertilizer distributor is preferable, especially when the grove is large. The fertilizer should be distributed well out over all the ground shaded by the branches, so that the entire widespreading root system may be reached. In mature groves practically all the ground should receive fertilizer, while with very young trees it is only necessary to spread the fertilizer over a strip 3 or 4 feet wide on either side of the trunk. Care must be used to see that the fertilizer is kept a foot or two away from the trunks, as it is sometimes injurious to the crown roots.

Barnyard Manure

In Florida the opinion at one time prevailed that barnyard manure was injurious to citrus trees and that its use frequently resulted in die-back. It is true that stable manure may have a bad effect, especially on trees growing in light soil, when it is applied in large quantities. When applied in small quantities, however, it is often one of the best fertilizers for citrus trees. Besides adding humus, stable manure promotes beneficial bacterial action in the soil.

Stable manure may be used profitably in somewhat heavier applications on heavy soils than on light, thin soils. On the comparatively heavy soils of California, as well as in Alabama and Louisiana, it is used in large quantities in the citrus groves with excellent results. On the lighter Florida soils the organic nitrogen of stable manure becomes available much more quickly than on heavier soils. For this reason stable manure must be used in smaller quantities on light soils in order to prevent overstimulation of the trees.

Lime is sometimes beneficial, especially on heavy soils rich in humus, but it must be used with caution, as heavy applications release plant food too rapidly, with the result that the soil becomes burned out and the tree growth impaired. On light or medium grades of citrus soils the use of lime is rarely advisable.

There are indications that citrus trees affected with the so-called mottle leaf may be benefited greatly by a judicious use of stable manure. The affected trees have a general sickly, backward appearance, and the leaves show pronounced splotches of yellow between the veins and the midribs. In many cases the trouble seems to have originated through a too rapid depletion of soil humus, following applications of lime or intensive cultivation. Consequently, lime must be used with care on light soils. In the investigations mentioned above, it has been shown that mottle leaf may be overcome and the trees restored to normal condition by the application of small quantities of stable manure combined with the growing of cover crops so as to restore the soil humus content.

Trees which by a general sickly appearance and yellowish leaves indicate a lack of nitrogen may also be benefited by several light applications of manure.

Pruning

When properly headed at planting time citrus trees require little pruning later. The general methods of pruning the trees when they are first set out were described in connection with the planting directions.

The pruning given during the first few years of the tree's life should be a continuation of that started when the trees were planted. All undesirable branches should be removed while they are still small and three or four limbs developed as a framework. Long, weak limbs that do not show a tendency to branch should be headed back, so that the tree will be kept strong, compact, and symmetrical. The top of the tree should not be allowed to become too dense, while on the other hand it should not be left so open that the trunk and inside branches are exposed to sun scald. Whenever it is necessary to prune off limbs whose removal will leave the inner branches exposed to the sun, the exposed branches should be protected from sun injury by a liberal coat of whitewash applied to reflect the heat.

Bearing trees well cared for will need but little pruning. This pruning may be done at any time of the year when most convenient. Most growers prune in summer when other work is slack. The most important object is the removal of all dead, decayed, and injured wood. Such wood when left provides a breeding place for the fungus that causes melanose and stem-end rot, and the removal of this wood will tend to reduce the chances of these diseases developing.

It is best to maintain trees in good shape by doing what pruning is necessary every year, as heavy pruning is objectionable. However, it is often advisable to prune severely trees long neglected in order to put them into shape for good production. After a heavy pruning of this sort a vigorous growth of suckers or water sprouts will appear. These should be thinned out, leaving only such as may be desired for developing into permanent branches. Sometimes a few water sprouts are left along the trunk and inner limbs and pinched back to form short inner fruiting branches. With most trees, however, the shade is too dense to favor much fruiting of these inner branches.

The principal tools used in pruning are the hand shears, knife, and saw. All tools should be kept as sharp as possible. It is very important to make the cuts clean and close to the trunk or branch. Stubs should never be left, as they do not heal over well and eventually cause weak places in the tree. The large cut surfaces may be coated with liquid grafting wax or white-lead paint.

Frozen trees should be pruned well back to good sound wood as soon as the extent of the injury is apparent, which will usually be within a few weeks after the freeze. Benefit is derived not only through stimulation to new growth but from the protection afforded against melanose and other diseases.

Irrigation

In many of the Gulf coast sections a dry spell is frequently experienced during the spring months. These droughts are often the cause of damage to citrus trees, and some growers have resorted to irrigation as a means of insuring the setting of a good crop of fruit.

In planning the installation of a system of irrigation the fact must be taken into account that in some years

no long droughts occur and irrigation is unnecessary. The total expense of installing and maintaining an irrigation plant must be balanced against the advantages gained during the years when it is actually needed. It is therefore best to use as simple and inexpensive a system as will do the work. In many locations in Florida an efficient irrigaiton system for citrus groves can be cheaply installed, and most growers who have such systems consider them profitable investments.

Information concerning the irrigation of citrus groves in Florida may be obtained from Department Bulletin 462.

Protecting Groves from Frost

The freezes of 1895, 1899, 1917, and other years demonstrated to the citrus grower in the Gulf States the importance of being prepared to protect his trees from frost damage.

Young trees should always be mounded or banked in localities where killing frosts occur. In the freeze of February, 1917, thousands of young unmounded trees were frozen to the ground. In the case of properly mounded trees in the same localities new shoots sprang from above the buds and the trees were restored with very little loss of time. In the case of the Satsuma oranges it has sometimes appeared that banking was of doubtful value, but the evidence from thousands of banked trees in February, 1924, indicates that when banking is properly done it is successful in protecting the young Satsuma bud. Banks should be inspected at intervals and if necessary on heavy soils sand should be used next to the tree to obtain good contact with the tree trunk. Setting Satsuma trees with the bud union a few inches underground is a practice that is sometimes followed to obviate the need for banking, but it is doubtful if the results justify such deep planting. The trifoliate orange seldom produces a thrifty sprout for rebudding if the budded top is killed, so that protection of the bud is especially important in case of a freeze. The loss of the bud means also the loss of the root system. On this account the citrange is receiving some attention as a Satsuma stock, this hardy hybrid of the trifoliate and sweet orange having the ability to produce vigorous sprouts in case the top is frozen.

Many methods of frost protection have been advocated for citrus groves. Individual tents and sheds for entire groves have been tried, but were found too expensive and cumbersome. The principal methods of protection now used in the Gulf States are wood fires and coke or oil heaters. With each of these methods it has been found that it is the heat supplied and not the smoke or smudge that gives the protection.

In the course of a survey made of the Gulf States citrus sections immediately after the freeze of 1917 the results obtained by all of these methods were studied and compared. It was found that in practically every case where wood fires were used with care and intelligence very satisfactory results were obtained, even under the most trying circumstances.

Wood Fires

A very striking example of the efficiency of wood fires when properly handled was shown in the 10-acre grove of L. D. Jones, near Orlando, Fla. This grove was exposed to the full sweep of the wind and a minimum temperature of 22 degrees F. Half of the grove was heated by a large wood fire in every alternate square of trees. In this area practically no damage was done. Trees, fruit, and even some blossoms remained uninjured. In striking contrast to this part of the grove, the unprotected half was severely damaged.

The objection is sometimes made that wood firing is not suitable in a large grove on account of the labor involved. Several very large groves, however, were efficiently and cheaply fired with wood. One grove of more than 300 acres was successfully carried through a temperature of 21 degrees F.

For wood fuel, pine logs and pine and oak stumps are frequently used. Some growers used discarded railroad ties, which they obtain for the expense of hauling.

Growers who fired two or three nights during the freeze of 1917 used from 10 to 15 cords of wood to the acre, at a cost of about $2 a cord. The quantity used was in proportion to the exposure of the grove and the temperature experienced. In old, thickly planted groves less fuel was used than in young and open plantings. The total labor cost, including the cost of hauling in wood and preparing the fires, averaged about $10 an acre, making the total cost of fuel and labor for two or three nights of firing about $40 an acre.

The most commonly used material for lighting wood fires was chips or waste from turpentine stills. A few growers used kerosene torch lighters with much success.

Most growers stow their wood in piles just outside the grove until the beginning of the danger season, when it is carried into the grove and piled in position for use. One pile in every square of four trees is usually made, particular attention being given to the north and west side of the grove. In many cases it is not necessary to light more than each alternate pile until the cold becomes intense.

For lighting and caring for wood fires in small groves one man will be needed for every 2 acres, while in larger groves with better organization and equipment one man should care for 3 acres or even more.

Oil Heaters

Oil heaters were used in a number of groves, but failed to give satisfaction in many cases. This was due in part to the inexperience of the growers in handling oil. The most satisfactory type of heaters were those of large capacity, holding 9 gallons or more of oil. Too much refilling was necessary when small oil reservoirs were used.

In a number of instances growers attempted to use heavy oil which had been stored for a number of years, and which had become so thick that they could not be lighted. Light distillates, on the other hand, were found to be in excellent condition, even after long storage. Even the distillates will not light readily in a new pot especially on a cold night. New pots should be burned for a short time to accumulate a layer of soot inside, an efficient aid to quick lighting.

The chief advantage of oil heaters as compared with wood fires is that the former, when skillfully handled, often give better regulation of temperature, and the fires can be started more quickly and with less labor. On the other hand, the initial cost is very high, often exceeding $200 an acre. It is believed that for the Gulf States where wood can be obtained close at hand, and hence cheaply, it will prove to be more economical and efficient than oil.

Coke Heaters

Coke heaters have been used by several growers with success. The coke is burned in metal stoves of special construction, or in heaters constructed of ordinary hollow tile bound together by wire.

(Continued next issue)

SUCCESS RECIPE

A young man just out of college sought the advice of a hard headed and successful business man.

"Tell me, please, how I should go about getting a start in the great game of business?"

"Sell your wrist watch and buy an alarm clock." was the laconic reply.

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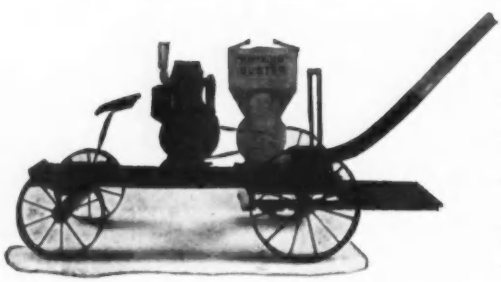

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MEXICAN FRUIT FLY IS STOPPED AT BORDER BY QUARANTINE FORCE

The Mexican fruit fly is believed to have passed the "zone of defense" in Mexico and to have penetrated the State of Sinaloa on the Gulf of California where it presents an increasing threat to the fruit centers of the Southwest, according to the Plant Quarantine and Control Administration of the U. S. Department of Agriculture, which reports the seizure at Nogales, Ariz., of two lots of plums infested by this dangerous enemy of citrus and stone fruits.

Maggots of the fruit fly were intercepted at Nogales for the first time on June 3, in plums discovered in the baggage of a passenger who said they were bought somewhere between Guadalajara, in the State of Jalisco, and Mazatlan, in the State of Sinaloa; and the second time, June 11, in plums purchased in a market at Nogales, Sonora. Quarantine authorities could not obtain definite information as to the origin of the plums, but it appears that they were shipped from Sinaloa and that the Mexican fruit fly is now established in that State.

"The finding of this pest in fruit from Sinaloa is of special importance," says the Administration, "Because so far as heretofore known the States of Sinalo, Sonora, and Nayarit, bordering the east coast of the Gulf of California, have been free from infestation. The Mexican Government had created a 'zone of defense' around these States to prohibit the movement of host fruits by land, water, or air into or through that zone. Indications that the fruit fly is established in Sinaloa, several hundred miles closer to the orchard and trucking districts of our Southwest than hitherto known, illustrate forcibly the increasing risk of the introduction of this pest through border ports near the fruit centers of Arizona and California."

The Mexican fruit fly has caused serious losses along the eastern section of the international border. In 1927 and again in 1929 infestations were discovered in the Rio Grande Valley of Texas. Diligent inspection and rigorous eradication measures, which included the maintenance of a starvation period during which no host fruits were allowed to ripen, are believed to have eradicated the pest from Texas, and no infestations have been reported since April, 1929. This fruit fly is particularly dangerous to citrus fruits. In the Texas infestations the Mexican Government aided the United States control forces by enforcing the starvation period on the Mexican side of the Rio Grande.

WHY DO CITRUS FRUITS HELP TO PREVENT COLDS?

The following answer is given by Carl J. Klemme, assistant professor, School of Pharmacy, Purdue University (American Druggist, April):

"The answer to the question regarding the use of Citrus fruits as a preventive of colds and influenza is simple enough in the light of physiological chemistry, and yet there are many who cannot explain it. The citric acid of the fruit is present largely in the form of its salts, while the rest of it is changed to the sodium salt in the small intestines and then absorbed. In the process of metabolism the sodium citrate is oxidized, the carbon moiety being changed to carbon dioxide, thus forming sodium bicarbonate in the blood stream. This, of course, increases the alkali reserve of the body, since sodium bicarbonate is one of the important buffers of the blood as long as the proper alkanility of the blood is maintained the chances of infection are greatly decreased."

Texas Citrus Exchange Adopts Brogdex

The Texas Citrus Exchange has contracted for Brogdex installations in every house it controls. That means 80 to 85% of the entire Texas crop will be Brogdexed.

President John Shary and some other Exchange officials were in Florida in April investigating packing practices in Florida and particularly the Brogdex System. He gave out an interview to the Tampa Tribune in which he stated, among other things, that in five years Texas would be shipping 35,000 cars of citrus.

This interview created a lot of discussion and several prominent packers went to Texas to see for themselves. They were amazed at what they saw and reported that Shary's statements were conservative.

Texas has grown from a 10-car shipper in 1920-1921 to a 4894-car shipper in 1929-1930. And only half her trees are in bearing. New plantings have averaged over a million trees a year since 1925. 80% of these plantings have been to grapefruit. In 1920 Florida produced 95% of the grapefruit grown in this country; ten years later she produced only 84%, the shrinkage of 11% being the Texas production. And now it is claimed that in a few years Texas tonnage will equal that of Florida.

It is apparent that Texas competition will be largely with Florida. That means a fight for market preference with the chances all in favor of the fruit that looks the best and keeps the best. That is why the Texas Exchange adopts Brogdex—it improves the appearance and prolongs the keeping time.

The advantage should be with us but if we continue to ship a lot of poor keeping fruit we will find it increasingly difficult to hold our own against the better looking, better keeping Brogdexed fruit from Texas.

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Pan American Agricultural Conference

Pan-American Agricultural Conference Will Discuss Many Important Problems

North America will meet Latin America in Washington next September for broad discussion and examination of the problems of agriculture that affect or are common to the two continents. Officials of the U. S. Department of Agriculture, which is cooperating with the Department of State and the Pan-American Union in preparing for this Inter-American Conference on Agriculture, Forestry, and Animal Industry, believe it promises to be at least as important as any previous gathering for any other purpose in which the two continents have joined forces. The conference which will be held at Washington from September 8 to 20 will delve into practical problems of agriculture and will devote special attention to agricultural problems of an economic and scientific nature.

Called in accordance with a resolution of the Sixth International Conference of American States at Havana in February, 1928, the coming assembly will be the first Pan-American gathering to deal exclusively with questions related to agriculture. This subject has been on the program of several of the Pan-American scientific and commercial congresses, and a group of the nations concerned have discussed various phases of the problem at other meetings, but at no previous conference has an attempt been made to cover such a wide range of agricultural topics or to consider in such a comprehensive way plans looking to the scientific and economic development of agriculture and its related industries throughout all the nations of the Americas.

Problems of inter-continental concern will be discussed in their broadest scope and with a view to formulating basic plans for effective continental cooperation in the development of the agricultural industries. Both governmental agencies and private organizations will participate, and the conference will endeavor to promote cooperation between governments and private citizens in the study of the problems presented.

The conference will consider broadly the problems of research in agriculture and forest development and methods of preventing and eradicating diseases and pests affecting plants and animals. Sponsors of the conference also anticipate that in discussing agricultural economics the members will explore the problems of competition which are now beginning to bear heavily on the nations in the tropical and subtropical regions of this hemisphere. Tropical countries of other continents now offer growing competition in production of such products as rubber, coffee, sugar, cacoa, cotton and other vegetable fibers, tobacco, and citrus fruits. In many of these products the New World formerly enjoyed practical freedom from competition.

The conference will also consider plans looking toward a coordination of research work by groups of the American nations acting in harmony to improve and develop the crops in which they have common interests. It will study the latest scientific methods both for the growing and for the marketing of agricultural products.

Reports dealing with the various questions on the agenda have been prepared by experts and are now being sent to the national committee in the different countries, and to the private associations which are being invited to attend. This will promote advance study in preparation for the discussions at the conference itself, which will be chiefly round-table gatherings.

These papers include studies of the importance of surveys and inventories of natural resources; of problems dealing with land, with forestry, with animal industry, with crop production and with agricultural economics; and also of educational problems. They deal with the culture of rubber, sugar cane, cotton, tobacco, coffee, cacoa and other products, and consider questions of soil and soil management, fertilizers, labor, diseases, insect pests, breeding and selection, and other problems affecting the individual industry. Other papers discuss soil conservation and the classification and utilization of public lands; principles of animal breeding; animal quarantine; foreign crop introduction; cooperative agricultural improvement associations; agricultural demonstrations; cooperative marketing; and other topics of inter-continental interest.

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THREE YEARS UNDER THE PRODUCE AGENCY ACT

(Continued from page 8)

A source of trouble in the enforcement of the Act is the failure of many agents to keep proper records of transactions. It is not uncommon in the investigation of a complaint against a merchant who has an excellent reputation to find that the merchant has difficulty in proving his good faith, simply because he has failed to protect himself with adequate records showing the sales covering the shipment.

The department believes that every commission merchant should keep such records as will identify each lot received for sale on consignment, and that his sales tickets should identify the lot from which each sale was made. It is believed also that so far as is practicable he should keep a record of the persons to whom goods are sold in order that a complete check may be made of the handling of each individual shipment. Many dealers object that such a system would be far too expensive, but it is believed that a simple system can be developed which will hold the expense to a minimum and at the same time give the grower the information to which he is entitled.

Many shippers make the mistake of trying to force commission merchants to handle their goods on too low a commission. No shipper cares to pay an extravagant amount for the sale of goods. On the other hand, if he demands of his agent that he handle his goods for too low a charge he thereby tempts the agent to invent fictitious charges to make up the difference.

Cases have been found where the commission charges assessed in certain cities were on so low a basis that other charges had grown up to offset the low commission. In one case "7 per cent and cartage." The shipper felt that his goods were being handled on a very low commission, but overlooked the fact that he might be assessed cartage where no cartage was incurred. The merchant maintains that there is nothing dishonest in his charging cartage, that it is a part of his charge which he quotes to everyone alike, and that those who ship to him expect to pay it. What charge is made, or the basis on which the charge is made, is of course a matter of agreement between the agent and the principal; the Act has nothing to do with that. However, such a method of establishing the rate of pay is susceptible of misunderstanding by the principal and can be used against him by an unscrupulous agent.

FRUIT AND VEGETABLE HANDLERS MUST APPLY FOR U. S. LICENSE

Application forms for licenses under the Perishable Agricultural Commodities Act, approved by President Hoover on June 10, are being mailed to dealers in fresh fruits and vegetables by the administrators of this act in the Bureau of Agricultural Economics of the U. S. Department of Agriculture. Under the act it is the duty of dealers and handlers to apply for a license and it is not incumbent on the department to notify them individually. Nevertheless, the department is trying to notify all persons affected by the law. The act provides that all dealers must have licenses to operate after December 10, 1930. Requests for application forms should be addressed to the Bureau of Agricultural Economics, U. S. Department of Agriculture, Washington, D. C.

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Niagara Crop Protection Products stand between plant insect pests and diseases — and your profits. They protect you from the ravages of those destructive elements which threaten to reduce both the quantity and quality of your crops. Some of the most popular of these Niagara Crop Protection Products are:-

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7 Ripens and colors fruits and vegetables that mature late in the season.
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Quarantine Plant

PLANT QUARANTINE LAWS NOW ENFORCED IN MANY COUNTRIES

Growth of international trade and knowledge of serious losses caused by the spread of diseases and insect pests of crops have combined to develop a complex system of plant quarantines and regulations, now enforced by many nations of the world. The United States is just one of the nations which have found it necessary to adopt such measures, says Lee A. Strong, chief of Plant Quarantine and Control Administration, U. S. Department of Agriculture.

A summary of Cuban plant quarantine laws shows that a large number of plants and plant products produced in the United States are denied entry at Cuban ports, because of the danger of introducing destructive pests or diseases. This summary has just been prepared by the U. S. Department of Agriculture, in cooperation with Cuban officials, for the guidance of persons interested in the exportation of plants and plant products from the United States to Cuba, and can be obtained by writing to the Plant Quarantine and Control Administration, Washington, D. C.

Since the discovery of the Mediterranean fruit fly in Florida no fresh fruit of any kind, nor any vegetable known to be a host of the fly is allowed entrance to Cuba from Florida. Certain fruits grown in Texas are also kept out of Cuba on account of the Mexican fruit fly.

Plant quarantine laws of other foreign nations will be summarized by the Plant Quarantine and Control Administration in the near future and the bulletins will be available free. Announcement of these bulletins will be made as they are published.

FARM WAGES DECLINE

A two per cent decline in the index of the general level of farm wages from April 1 to July 1 is reported by the Bureau of Agricultural Economics of the U. S. Department of Agriculture. This decline, in sharp contrast to the usual seasonal farm wage advance of 6 per cent for the period, brought the index to the lowest July level recorded since it was first compiled in 1923. It is believed that this reflects the decline in business activity. At 160 per cent of the pre-war level on the first of this month, the index was 13 points lower than a year ago. All classes of wages, per month, and per day, with or without board, were lower throughout the country than a year ago.

The supply of farm labor on July 1 was the largest reported by farmers in any month covered by available records. Apparently unemployed industrial workers have turned to the country in search of a livelihood, and the reports indicate a supply of farm labor 103.4 per cent of normal. Last year, a supply only 92.3 per cent of normal was reported on July 1.

On the other hand, owing to the low level of prices of agricultural products, farmers are tending to do as much of their own work as possible. In consequence, demand for farm labor was reported at 81.4 per cent of normal on July 1 in comparison to 90.8 per cent a year ago.

FLORIDA LEADS SHIPMENT OF SIX MAIN TRUCK CROPS

Florida lead all other states in the shipment of six of the 12 leading truck crops during the 1928-29 season, according to a recent survey by the Department of Agricultural Economics at the Experiment Station. The crops were celery, tomatoes, green beans, cucumbers, peppers, and egg plants. The state also stood second in the shipment of watermelons, and third in early Irish potatoes.

CLASSIFIED Advertisments

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

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FOR SALE—By owner, eighty acres, two-year-old best looking grove at reasonable price. Howey-in-the-Hills. For further information write "A. Z." P. O. Box 1261, Orlando, Florida.

FOR SALE—Pineapple land in winterless Florida. $15 an acre. Almont Ake. Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY. ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANTED—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

MISCELLANEOUS

RAISE PIGEONS—Profit and pleasure. Illustrated descriptive catalogue postage six cents. Vrana Farms, Box 314a, Clayton, Missouri.

TUNG OIL TREES—Cluster variety. Vigorous. Forty cents each. Lots of hundred 30 cents each. Hunt Bros., Inc., Lake Wales, Fla.

FOR SALE: Splendid bearing citrus grove in Lee County, far removed from Fruit Fly infestation. Will produce 20,000 boxes coming season. If you want this grove address P. O. Box 295, Fort Myers, Fla.

ORANGE PACKERS ATTENTION: — Two chemical transparent flexible orange coating processes for sale; royalty or license basis. Patent pending. Dr. C. V. Berry, 251 West 111th Street, New York City.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman. Dr. 1440, Knoxville. Tenn.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama. for prices.

AVOCADOS - SEED — Grafted. Reliable bearers only. John B.Beach, West Palm Beach, Florida.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

FOR SALE OR TRADE—Good horse, single wagon and two sets harness. J. P. Lynch, Groveland, Fla.

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September Issue

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